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THE 1934 AGRICULTURAL OUTLOOK FOR CALIFORNIA*

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PREFACE

THIS REPORT PRESENTS a summary of the present available facts bearing upon the future trends of production of important farm products produced in California, together with a summary of the present situation of these products with regard to supply, demand, and prices.

The information upon which this report is based was obtained from many sources, among the more important of which are the United States Department of Agriculture Bureau of Agricultural Economics, United States Department of Commerce, California Coöperative Crop Reporting Service, Federal-State Market News Service, and many coöperative associations and commercial companies. The national *Agricultural Outlook for 1933-34* prepared by the staff of the United States Department of Agriculture Bureau of Agricultural Economics assisted by the representatives of the State Agricultural Extension Services has been particularly helpful and has been quoted extensively for those products grown throughout the United States.

APPLES

Despite some neglect of orchards since 1929, there has been no shortage of apples in the United States in seasons of favorable growing conditions, nor is there any immediate prospect for a shortage, even though plantings in the past three years have been very light. During the past four years commercial apple production has averaged only 4 per cent less than that of the previous four years. The number of young trees now in commercial orchards will, with reasonable care of orchards and moderate tree replacements, maintain commercial production at a fairly high level for several years, which will provide an abundance of apples for domestic consumption and a surplus for export.

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Although there was a net decrease of 46 per cent in the total number of apple trees in the United States between 1910 and 1930, only a moderate decline in production occurred. During the past five years, total production averaged only 11 per cent below the 1909–1913 level and only 24 per cent below the peak period of production, 1914–1918. The smaller decline in production, as compared with tree numbers, is due primarily to the shift that has taken place from farm to commercial orchards with better locations, and to the increasing bearing capacity of many trees as they have approached or reached full-bearing age.

During the past twenty years, production of apples in the 11 Pacific Coast and mountain states increased about 195 per cent. At the same time the number of bearing trees increased 10 per cent, and yield per bearing tree increased from an average of 1.5 bushels to about 4.3 bushels. In these western states production now is apparently close to its peak for the present cycle. In the Pacific Coast states as a group, only a very small percentage of the trees is yet to come into bearing, but production as a whole is being fairly well maintained by tree resets and by an increase in producing capacity of trees due to an advance in their age. Plantings in the western apple states have been very light in recent years. Commercial orchards in the better districts are generally well cared for, but in the poorer fruit districts neglect has been noticeable. Low prices of apples in eastern markets during the past three years have been reflected by sharp declines in returns to western growers, since transportation charges, which have remained almost constant, have absorbed an increasing proportion of the prices paid by consumers. This has made it difficult for western growers to compete successfully with producers near the large consuming centers.

Apple production in California has risen from an average of 4,851,000 boxes in 1921–1923 to an average of 5,423,000 boxes in 1930–1932. Most of this increase has been in the production of Gravenstein apples in the Sonoma–Napa district. Shipments of Gravensteins from this district averaged only 751,000 boxes in 1921–1923 as against an average of 1,372,000 boxes in 1930–1932, an increase of 83 per cent. During the coming years a further increase in Gravenstein apple production is in prospect. In 1932, the total acreage of apples in Sonoma and Napa counties amounted to 15,000 acres, of which 1,900 acres, or 13 per cent, were nonbearing. Furthermore, a considerable proportion of the bearing acreage has not yet reached the age of full bearing. In the other counties of the state, which produce mainly fall and winter varieties, only 7 per cent of the total acreage is nonbearing. The combined acreage in bearing

in counties other than Sonoma and Napa has substantially decreased during the past five years, falling from 40,500 acres in 1927 to 32,800 acres in 1932.

Farm prices of Fancy Gravensteins in 1933 averaging \$0.28 a box, although above the disastrously low price of \$0.17 a box received in 1932, were much below those received in earlier years. In 1931, the farm price was \$0.58 a box; while during the five years 1926-1930, it averaged \$0.89 a box. Shipments of Gravensteins from the Sonoma-Napa district were about 20 per cent smaller in 1933 than in 1932 and about 8 per cent below the average of the five years 1928-1932. Storage holdings of apples in the United States on June 1, 1933, were 12 per cent below those on June 1, 1932, but 9 per cent above the average of the five years 1928-1932.

Exports of apples during the 1932-33 season amounted to 13,800,000 bushels or about 16.1 per cent of the total commercial crop. This was considerably below the average quantity exported in the previous five-year period, but the proportion of the commercial crop that was exported was about up to average. It is evident that with yearly exports ranging from 12 to 20 per cent of the commercial crop, the export outlet is essential to the orderly marketing of the United States apple crop. From a long-time point of view apple exporters in the United States may expect more competition from foreign supplies in the chief export markets. Canada, Italy, Australia, and New Zealand have been steadily increasing their apple exports during the last few seasons. These countries are definitely on an export basis and are giving more attention to improving the quality of their apples for export. Apples from the United States also have to meet competition from apple crops that are grown in practically all countries to which United States apples are exported. In most of these countries the governments are aiding growers to produce better fruit.

APRICOTS

The peak in apricot production in California has been reached. As contrasted with the rapid increase in production during the past twenty years, a stationary situation is in prospect for the next five years with average production below the large crops of 1931 and 1932, which were years of unusually high yields per acre. The bulk of the apricot acreage in California is now in full bearing. The nonbearing and young-bearing acreage is no more than sufficient to offset the decline in the present full-bearing acreage.

The total acreage of apricots in California in 1933 amounted to 84,100 acres, of which 79,100 acres or 94 per cent were in bearing and 5,000 acres or 6 per cent were nonbearing. This small nonbearing acreage is

not sufficient to offset the normal removal of trees due to old age. During the next five years there will probably be a net decrease in the bearing acreage amounting to several thousand acres. Production during that period, however, is not likely to be reduced correspondingly because of the increase in yields on the young acreage which has recently come into bearing. Five years from now, however, all of the present bearing acreage will be in full bearing and the older acreage will be declining in productivity. Thus, at that time a downward trend in production will be started unless plantings in the meantime are larger than the average of the past few years.

Yields per acre in 1933 were slightly below average, while in both 1931 and 1932 they were materially above average. Total production in 1933 is now estimated at 244,000 tons as against 270,000 tons in 1932, 277,000 tons in 1931, and an average of 195,000 tons during the five years 1926-1930.

From the beginning of the apricot industry in this state up to 1932 there was a steadily upward trend in production. During the past ten years the average increase in the trend of production amounted to 10,000 tons a year. The rapid expansion in bearing acreage prior to 1928 and the increase in production on the young-bearing acreage since 1928 resulted in the trend of production being 70 per cent higher in 1932 than in 1922. There is no prospect, however, that this upward trend will continue. The most probable situation during the next five years is a sideways trend with no pronounced upward or downward slope.

During the five years 1928-1932 an average of 69 per cent of the harvested production of apricots in California was dried, 20 per cent canned, and 11 per cent shipped fresh. As compared with the previous five years, the proportion canned decreased, while the proportions dried and shipped fresh increased.

Canning Apricots.—Prices paid growers in 1933 for apricots used for canning were above the disastrously low prices of 1932 but below the average of former years. In the Santa Clara district growers received \$30 a ton for apricots averaging 12 to the pound as against \$20 a ton in 1932, and an average of \$52 a ton during the five years 1927-1931. In the San Joaquin district prices to growers in 1933 were about \$10 a ton lower than in the Santa Clara district.

Total shipments of canned apricots in 1932-33 amounted to 1,997,000 cases as against 2,037,000 cases in 1931-32 and an average of 2,726,000 cases during the five years 1926-27 to 1930-31. The carryover on June 1, 1933, of 323,000 cases was the smallest since June 1, 1929, and was 52 per cent below the average carryover of the previous five years.

Exports of canned apricots in 1932-33 amounted to 476,000 cases as against 496,000 cases in 1931-32 and an average of 635,000 cases during the five years 1926-27 to 1930-31. In 1932-33, 23.8 per cent of the total shipments were exported as against 24.4 per cent in 1931-32 and an average of 23.2 per cent during the previous five years. Exports of canned apricots to the United Kingdom, our most important foreign market, have been influenced by opposing forces during recent months. In November, 1932, the United Kingdom placed an import duty on canned fruits of 15 per cent ad valorem, which tended to curtail our exports to that country. On the other hand, the recent depreciation of the dollar in terms of pound sterling has tended to stimulate our exports to Great Britain. During the past two years exports to Canada have been very small, amounting on an average to only 2,500 cases a year as against an average of 26,200 cases during the four years 1927-28 to 1930-31. In August, 1931, the Canadian general import duty on canned fruits was raised to 5 cents a pound, which rate practically prohibits the United States from exporting canned apricots to that country.

Between April and September, 1933, selling prices of canned apricots advanced from \$1.15 a dozen cans of 2½ Choice to \$1.50 a dozen, but during the following three months no further advance occurred. Since September prices have been as high as they were in November, 1931, but considerably below those which prevailed in 1930 and earlier years.

Dried Apricots.—Packers' quotations on Choice dried apricots advanced steadily from a low of 7.4 cents a pound in January, 1933, to 10.0 cents a pound in September and remained at approximately that level through November. During the six months, July to December, 1932, packers' quotations on Choice dried apricots averaged 7.3 cents a pound as against 8.4 cents in 1931 and an average of 16.6 cents during the five years 1926-1930.

Data on the 1933 output of dried apricots are not yet available. Present indications are that the quantity dried was materially under the record outputs of 1931 and 1932, which amounted to 37,400 tons and 35,300 tons respectively. The average output for the five years 1926-1930 amounted to 22,400 tons.

Exports of dried apricots during the twelve months, July, 1932 to June, 1933, amounted to 17,135 tons as against 18,811 tons in 1931-32 and an average of 10,905 tons during the five years 1926-27 to 1930-31. Export prices in 1932-33 averaged 7.1 cents a pound as against 9.9 cents a pound in 1931-32, a decrease of 28 per cent. Both quantity exported and the price received in the export markets were lower in 1932-33 than

in 1931-32. During the first three months of the 1933-34 season, exports were 5 per cent below those of the corresponding months of the 1932-33 season. Export prices, however, were 40 per cent higher.

Fresh Apricots.—Interstate shipments of fresh apricots in 1933, amounting to 581 cars, were only 59 per cent as large as in 1932, while the average f.o.b. price of \$0.96 a crate received in 1933 was 52 per cent higher than that received in 1932.

Eastern markets have never afforded an outlet for any considerable portion of the California apricot crop. Even in 1931 and 1932, when interstate shipments were the largest on record, being over twice as large as the average of the previous five years, they accounted for only about 12,000 tons of apricots. The chief limiting factor in the eastern shipments of this fruit is its extreme perishability. The necessity for handling fresh apricots quickly makes it desirable to sell them in a few large auction markets rather than in many private sales.

CHERRIES

A further substantial increase in cherry production on the Pacific Coast is in prospect during the next few years. The increase in production from the nonbearing and young-bearing acreage is likely to be considerably greater than the decrease in production on the old orchards.

The total acreage of cherries in California in 1933 amounted to 17,600 acres, of which 14,000 acres or 80 per cent were in bearing and 3,600 acres or 20 per cent were nonbearing. Approximately 25 per cent of the bearing acreage in 1933 was less than twelve years of age and, therefore, not yet in full bearing. Since the cherry tree is one of the longer-lived deciduous trees, the normal decline in acreage as the result of old age will not be rapid for some years and will be more than offset by the increase in bearing capacity of the young orchards.

From 1921 to 1926 there was only a small rise in the trend of cherry production in this state, but since 1926 the rise has been rapid. During the past seven years the average increase in the trend of production has amounted to about 900 tons a year. A further rise in the trend of production is to be expected for the next few years, but it is not likely to average as large as in the past seven years.

The 1933 crop of cherries in California is now estimated at 23,000 tons as against 18,500 tons in 1932, and an average of 17,460 tons during the five years 1927-1931. Yields per acre this past season were above average. The condition of the crop was 73 per cent of normal as against the twelve-year 1921-1932 average of 64 per cent.

In the Pacific Northwest the upward trend in production, which has been underway for the past ten years, is likely to continue. In 1930, only 55 per cent of the cherry trees in Oregon were in bearing, while in Washington only 60 per cent were in bearing.

Fresh Cherries.—California fresh cherries ordinarily experience little competition from those produced in other states. The shipping season in California is usually completed before any large quantities from the Pacific Northwest are marketed. In 1933, however, the California shipping season was more than two weeks late, and during the latter part of the season our cherries met considerable competition from those of the Pacific Northwest.

During the past twelve years interstate shipments of California cherries have been increasing at the average rate of 23 cars a year. In 1921 the trend of shipments was at 570 cars, in 1933 at 846 cars. Actual shipments in 1933 amounted to 842 cars as against 728 cars in 1932, 1,034 cars in 1931, and an average of 719 cars during the five years 1926–1930.

The demand for California fresh cherries in 1933 was slightly above that of 1932. Although the average f.o.b. price in 1933 of \$0.80 a box (8 pounds net) was 8 per cent below the 1932 average price, the volume shipped in 1933 was 16 per cent larger than in 1932. In both 1932 and 1933, however, the demand for California fresh cherries measured by price was about \$0.65 a box below the 1926–1930 average.

Canned Cherries.—The Royal Ann (Napoleon) cherry is the principal variety used for canning on the Pacific Coast. Royal Anns are also used in the manufacture of maraschino and glacé cherries and small quantities are shipped fresh.

From 1921 to 1930 there was a small upward trend in the pack of canned cherries on the Pacific Coast notwithstanding the fact that the pack in California experienced a substantial decrease, falling from an average of 457,000 cases in 1921–1923 to an average of 354,000 cases in 1928–1930. The decrease in the California pack, however, was more than offset by the increase in the pack in the Pacific Northwest, which rose from an average of 323,000 cases in 1921–1923 to an average of 652,000 cases in 1928–1930. In 1931 and 1932 the packs in both California and the Pacific Northwest were much below the 1928–1930 average. In 1933, however, the pack in the Pacific Northwest was only 15 per cent below the 1928–1930 average, while the pack in California was 14 per cent above the 1928–1930 average. The combined pack on the Pacific Coast amounted to 955,000 cases in 1933 as against 522,000 cases in 1932, 421,000 cases in 1931, and an average of 1,006,000 cases in 1928–1930.

During the past three years there has also been a marked reduction in canners' selling prices and in prices paid growers. From 1921 to 1930 the average price paid growers for No. 1 Royal Ann cherries was 8.3 cents a pound. The price was 4 cents a pound in 1931, 3 cents a pound in 1932, and 4 cents a pound in 1933. Canners' quotations on No. 2½ Choice Royal Ann cherries, which averaged \$2.75 a dozen cans in 1930-31, fell to \$2.35 a dozen cans in 1931-32 and to \$1.80 a dozen cans in 1932-33. Quotations on the 1933 pack through October have averaged \$1.75 a dozen cans.

Maraschino Cherries.—The decrease in the use of Royal Ann cherries for canning during the past three years has been largely offset by their increased use in the manufacture of maraschino and glacé cherries. In California an average of 3,400 tons of Royal Anns was barreled in the two years of 1931 and 1932 as against an average of only 1,300 tons during the previous three years, while in the Pacific Northwest an average of 3,200 tons was barreled in the two years of 1931 and 1932 as against an average of 1,200 tons in the three years of 1928 to 1930.

In June, 1930, the import duty on cherries sulfured or in brine was raised from 3.0 cents a pound to 5.5 cents a pound with pits and 9.5 cents a pound with pits removed. Partly as a result of the higher duty and partly as the result of the low prices in this country, United States imports have greatly decreased. In 1932-33 total imports amounted to only 1,801,000 pounds as against 6,091,000 pounds in 1931-32 and an average of 15,310,000 pounds during three years 1928-29 to 1930-31.

GRAPES

Wine Grapes.—The acreage and normal production of true wine-grape varieties in California will probably decrease but little, if at all, during the next few years; and, because of the repeal of the Eighteenth Amendment, may actually be increased by additional plantings, even though any general expansion of acreage is of questionable wisdom.

Average crops available from the present grape acreage appear to be sufficient to provide for as large a per-capita consumption of wine and brandy in the United States as was ever consumed in this country over a period of years. Although demand for wine grapes may be temporarily increased by the abnormally large quantity needed by commercial manufacturers to build up their stocks quickly after repeal, normally there will be large quantities of table and raisin-grape varieties—such as Malagas, Tokays, and Muscats—available for winemaking, in addition to a large tonnage of strictly wine-grape varieties. Moreover, the tem-

porary stimulus that may be given the industry by the necessity of building up the depleted stocks of wine in the state is not likely to last more than two or three years. Plantings made now would, therefore, not be likely to come into bearing until after the temporary improvement in demand for wine grapes had passed.

Although no *general* increase in grape acreage appears to be justified, some shift in wine-grape plantings may prove profitable in the case of particular varieties and localities. To assure growers of fair prices in the long run, any plantings should be carefully planned. Commercial wineries are likely to want less of some varieties of wine grapes and more of others than the eastern market has been taking.

During the next few years we will probably experience an overproduction of some red varieties, particularly of the Alicante Bouschet, and a small underproduction of certain dry, white wine grapes, and possibly also of certain red wine grapes used for making dry wines. The best dry-wine grapes in the state are produced in the cool coast counties of Mendocino, Sonoma, Napa, and Santa Clara and certain localities in other counties contiguous to the San Francisco Bay; before Prohibition, black and white dry wines from these counties were reputed for their quality. It appears likely that the pre-war demand for some of these dry wines may be revived, especially for certain white wines made from good-yielding varieties of high-quality grapes such as the Palomino (Napa Golden Chasselas), the Colombar (Sauvignon Vert), and the Franken Riesling. Some planting of these varieties of grapes may be necessary to make the dry white wines of this kind that are likely to be in demand again. However, such plantings should be rather limited. It is estimated that before the World War there were only 20,000 to 25,000 acres of the dry, white wine varieties in the state, or less than 15 per cent of the total wine-grape acreage.

Although the bearing acreage of wine-grape varieties in California reached a peak in 1929, it has declined less than 4 per cent since then. There were approximately 194,000 bearing acres in the state in 1929 and nearly 188,000 acres in 1933. Less than 1,000 acres were not yet in bearing in 1933.

At yields of 2.5 tons per acre, which appear to be fairly close to the normal for wine grapes, the 188,000 bearing acres in California in 1933 would produce approximately 470,000 tons of wine grapes. Besides this tonnage, a large additional quantity of table and raisin grapes will normally be available for diversion into wine and brandy-manufacturing, much of which might otherwise be wasted. The latest official estimate (November 1, 1933) of the 1933 California wine-grape crop is 373,000

tons, indicating a yield of only about 2.0 tons per acre or 20 per cent below normal.

Interstate shipments of strictly wine-grape varieties (excluding Malagas and Muscats which are discussed respectively under the table and raisin-grape headings) in 1933 were only a little over half the movement in 1932. Approximately 9,000 carloads were shipped in 1933 as compared with about 17,300 cars in 1932, or in the neighborhood of 120,000 tons in 1933 as compared with about 243,000 tons in 1932. Most of the balance of the 1933 crop was utilized in California, largely in the manufacture of wine and brandy by bonded establishments preparing to supply the demand for these products after the repeal of the Eighteenth Amendment. The reduction in the quantity of wine grapes demanded in eastern markets this year is largely explained by the expectation that repeal would result in a plentiful supply of commercial wines at reasonable prices. It is also claimed that eastern consumers have a considerable stock of last year's wine still in their cellars.

Eastern prices of our black wine grapes in 1933 averaged considerably higher than in 1932. The prices paid by wineries disappointed many growers and varied greatly according to the variety of grape purchased, the date of purchase, and the producing locality, but in most localities those varieties of black wine grapes most in demand have brought growers more than last year's state average of about \$12 a ton. The highest prices appear to have been paid in Sonoma, Napa, and Santa Clara counties for grapes for manufacturing dry wines, and the lower prices in the San Joaquin Valley for grapes for sweet wine and brandy-making. Some growers are reported to have delivered their grapes to wineries on a share basis rather than accept the low prices offered and the credit risk of buyers who could not pay cash. The Federal-State Market News Service reports that many wineries were slow to contract for their supplies because of lack of finances and a desire to see how juice shipments to eastern markets would fare. Offers on black wine grapes and on Muscats in the San Joaquin Valley opened at about \$12 a ton delivered, but wineries bought most of them at \$15 later in the season. Wineries paid mostly \$10 a ton for Malagas, and, in the Lodi district, they bought heavily of Tokays at about the same price. Eastern auction prices of black wine grapes averaged about 20 cents a lug higher than last year and growers' returns from the tonnage shipped east appear to have been between \$20 and \$25 a ton, judging from f.o.b. quotations as well as auction prices. The decision of many shippers in the second week in October to stop shipping juice grapes while eastern markets were glutted had much to do with the better average auction price in 1933.

Raisin Grapes.—It still appears fortunate that the acreage and production of California raisin grapes have been declining, although slowly, for normal state crops continue to produce a surplus of both Thompson Seedless (Sultanina), and Muscat raisins, while large foreign raisin crops and high import duties in important foreign markets give little hope for expansion of our export sales. Moreover, there will probably still be plenty of raisin grapes available for wine and brandy manufacture in the state after repeal without additional plantings, even though our commercial wineries use more Muscats for this purpose than have been shipped to eastern markets for home wine-making in recent years.

Since the peak of California raisin-grape production was reached in 1927, the bearing acreage of these grapes has decreased about 30 per cent. Since 1931, however, the acreage has declined but slightly, and further reduction will probably be small during the next few years, and, hence, normal production is not likely to decline materially. The bearing acreage of raisin-grape varieties in California declined rapidly from 1927 to 1930, falling from 334,000 acres to about 248,000 acres, or 26 per cent in three years. Since 1930 the decline has been much slower so that the bearing acreage in 1933 was about 234,000 acres, showing a total decline since 1927 of 100,000 acres or 30 per cent. There have been almost no plantings of raisin grapes in the state since 1927. At that time there were only 2,000 nonbearing acres. At the present time there is practically none. Normal removal of acreage due to old age may, therefore, be expected to reduce gradually the bearing acreage during the next few years.

A combination of adverse factors affecting yields in 1933 has resulted in one of the smallest raisin-grape crops produced in California since the War. Preliminary estimates (November 1) indicate a crop of 916,000 tons of raisin grapes in 1933, or a yield of about 3.9 tons per acre as compared with a normal of about 4.3 tons per acre. The great reduction in the 1933 crop below the bumper crop of 1932 is largely due to damage from excessive heat and from leafhopper, together with the drain on the vines from the exceptionally large yields borne in 1932. Bearing acreage is only 5,000 or 6,000 acres less than a year ago.

At yields of 4.3 tons, the average of the last six years, the 234,000 bearing acres of raisin grapes in California in 1933 are capable of producing approximately 1,000,000 tons of grapes in normal years. Since bearing acreage is likely to decline but slowly, it would appear that normal crops may average somewhere near 1,000,000 tons during the next few years. Of this total tonnage an average of about 25 per cent of

Muscats may be expected, about 65 per cent of Thompson Seedless, and somewhat less than 5 per cent of Sultanas. Yields per acre of Muscat grapes are reported as exceptionally low this year, so the percentage of Muscats produced will be considerably below average and the percentage of Thompson Seedless considerably above average. Considering the relatively large carryover of old Muscat raisins in the state on September 1, 1933, the short 1933 Muscat crop is a fortunate coincidence for the raisin industry.

Shipments of Thompson Seedless grapes to eastern markets, mostly eaten as table grapes, were nearly as great in 1933 as in 1932. But interstate shipments of Muscats in 1933, nearly all of which are used for home wine-making, amounted to somewhat over 3,900 cars as compared with slightly over 6,200 cars in 1932. However, a considerable tonnage was purchased by California wineries. With repeal, it is probable that demand for fresh Muscat grapes will largely come from commercial wineries in the state rather than from home wine-makers in the East, whose direct demands for wine grapes will probably become inconsequential when they can again buy good California wines at reasonable prices.

Prices of both Muscat raisins and Muscat juice grapes during the 1933 marketing season averaged much better than in 1932. Eastern delivered auction prices of fresh shipments have averaged nearly 30 cents a package more than last year, and growers' returns from the unpacked fruit shipped east appear to have been about \$30 a ton (judging by both f.o.b. quotations and auction prices) as compared with "red ink" in 1932. Reduced shipments to eastern markets and improved prices have been due largely to the small Muscat crop and some winery demand revived by the anticipation of repeal. Wineries are reported to have paid from \$12 to \$15 a ton delivered for Muscats with most of the sales at the higher price.

The average price packers have paid for Muscat raisins this year has been between \$40 and \$45 a ton, or approximately double the 1932 price; while Thompson Seedless raisins have generally brought \$60 a ton as compared with an average of about \$40 in 1932. This big improvement in raisin prices appears to be due to optimism in the recovery of business conditions, the prospect of some industry-stabilization plan under the provisions of the Agricultural Adjustment Administration, and the short California raisin crop. However, the influence of a short crop has been partially offset by one of the largest September 1 carryovers of old-crop raisins in California in recent years and also by heavy production in foreign countries.

Current trade estimates (official estimates of the California Coöperative Crop Reporting Service will not be available before January 1) indicate that the total dried-raisin output of the state will be in the neighborhood of 180,000 tons of which 80 per cent will probably consist of natural and bleached Thompson Seedless. Since about 75,000 tons of old-crop raisins are estimated to have been on hand in California—sold and unsold—on September 1, 1933, it appears that about 255,000 tons of California raisins are available for the 1933-34 marketing season.

Shipments and consumption of California raisins have varied but little since 1928, amounting to about 215,000 tons, sweat-box weight, during the 1932-33 marketing season and in two other years since 1928. During the 1931-32 season only about 180,000 tons were shipped. United States consumers have eaten about 149,000 tons of the total of 215,000 tons shipped annually in three out of the last four years, and exports, including shipments to Canada, have averaged only 66,000 tons, sweat-box basis. Considering the competition we are likely to meet from foreign raisins and the high import duties into important foreign markets, it seems probable that the annual movement of California raisins into regular market channels at home and abroad during the next few years may average only about 220,000 to 230,000 tons at the most, even with considerable improvement in business conditions and the monetary situation.

Competition abroad from foreign raisins will normally be as keen during the next few years as in recent years, or perhaps more so. In order to sell abroad as many raisins as in recent years, our export prices will probably have to continue to be low, not only because of the large foreign crops in prospect, but also because of lessened demand for our exports in some of our most important foreign markets as a result of trade restrictions that substantially raise the price of our raisins to foreign consumers without a corresponding increase in price on raisins from other countries receiving preferential treatment. With foreign exchange at par, California raisins must pay an import duty of 2.28 cents a pound into the United Kingdom and 3 cents a pound into Canada, while Australian raisins are admitted free of duty under British preference into both of these countries. With foreign exchange above par, as it has been recently, these import duties are even larger in terms of our dollar. In order to take advantage of the big preferential duty in Canada, Australia has been exporting more and more raisins to that market. As a result, since 1928 Canadian imports of California raisins have fallen from an average of nearly 20,000 tons (equivalent sweat-box basis) to only 5,400 tons in 1932-33, while imports from Australia have

largely counterbalanced this decline. Our export prices during the current 1933-34 marketing season have been considerably higher in terms of dollars than in a year when we were on the gold standard; in terms of foreign money, prices during the current marketing season have been about the same as a year ago.

Preliminary estimates (November 1) of foreign raisin production for 1933 indicate crops nearly as large as those harvested in 1932, but currant production is considerably smaller and a large part of the Greek crop is reported to have been damaged by rain. Exports from the Australian raisin crop harvested in March of this year, the largest ever produced in that country (nearly 68,000 short tons), will compete largely with the part of our 1933 crop that is exported to England and Australia. A fairly large crop of raisins from Smyrna (about 56,000 tons as compared with 70,000 tons in 1932) is expected, which will compete directly with California exports not only in England but also in continental European markets. Available information regarding the acreage in foreign countries indicates that the total of foreign raisin production will normally be at least as large in the next few years as the average of recent years.

Table Grapes.—Plentiful supplies of table grapes will normally be available during the next few years as average production of table-grape varieties in the United States is not expected to decrease much during the next few years, nor consumption for table purposes to increase much. However, as a result of the repeal of the Eighteenth Amendment, some improvement in the market situation appears likely since commercial manufacturers of wine and brandy will probably utilize a considerable tonnage of table grapes which might otherwise prove a burdensome surplus in California.

The bearing acreage of California table grapes during the next few years may be expected to decline but slowly and hence normal production is not likely to decrease materially for a few years. The greater part (approximately 24 per cent) of the 28 per cent decrease in bearing acreage since the peak of production in 1927, took place before 1931. The rate of decrease since 1931 has been slow, and, although a few plantings have been made recently, they are not sufficient to offset normal removals in the future due to old age. In the four years from 1927 to 1931, the bearing acreage decreased from 132,000 acres to 100,000 acres, or approximately 24 per cent. However, from 1931 to 1933 the decrease has been only 5,000. In 1933 only about 1,000 acres of table-grape vines in the state were not yet of bearing age, as compared with nearly 5,000 acres in 1927.

The November 1 preliminary estimate of California production of table-grape varieties of 270,000 tons indicates a yield of about 2.8 tons per acre or nearly 20 per cent below normal expectation. At normal yields of about 3.4 tons per acre—the average of the last ten years—the 95,000 acres in bearing in 1933 would produce at least 320,000 tons of table grapes, which appears to be an ample supply for future market requirements unless the quantity utilized for wine and brandy by California manufacturers after repeal averages much greater than may reasonably be expected during the next five years.

Total production of table-grape varieties in the state averaged approximately 345,000 tons during the five years 1928–1932, but only 294,000 tons were harvested. Of the harvested tonnage, an average of at least 57,000 tons, or nearly 20 per cent, were apparently utilized directly or indirectly for wine-making (this included the tonnage dried and crushed which was actually designated as juice stock in the state and interstate shipments). Consumption as table grapes apparently did not average more than 237,000 tons a year during the period 1928–1932 because some of the shipments billed as table stock may have been utilized in home wine-making. If consumption of California table-grape varieties during the next few years should average about the same as the 1928–1932 average, and total production about 320,000 tons, it is apparent that between 80,000 and 85,000 tons of these varieties would be available for wine-making without restricting fresh consumption for eating purposes.

Judging by shipments of table grapes from California through November 8, it appears that interstate movement of table-grape varieties, exclusive of Thompson Seedless (Sultanina), may utilize 125,000 or 130,000 tons of the 1933 table-grape crop as compared with about 140,000 tons in 1932. Including interstate shipments of about 45,000 tons of Thompson Seedless table stock, the total California interstate movement of table stock in 1933 will approximate 170,000 or 175,000 tons, as compared with about 190,000 tons in 1932, of which about 50,000 tons were Thompson Seedless grapes. It now appears that of the total 1933 California crop of about 270,000 tons of strictly table-grape varieties, excluding Thompson Seedless, perhaps 140,000 tons were utilized in California largely by commercial wine and brandy manufacturers.

Shipments of table stock, including Thompson Seedless, from California through November 8, 1933, were approximately 10,800 cars as compared with about 12,500 cars for the corresponding period of the 1932 season and a total of about 15,200 cars for the entire 1932 season. Less than 100 cars additional of table varieties were shipped as juice

stock in 1933. Malaga table-stock shipments of 1,669 cars through November 8 of this season compare with 1,796 to the same date in 1932 and a total of 2,173 cars total for 1932. Thompson Seedless table-stock shipments from the state through November 8 of 3,266 cars compare with 3,947 cars to the same date in 1932 and a total of 3,980 cars for the season. Tokay shipments of 3,989 cars had moved east through November 8, or 35 cars more than for the corresponding period of last year. Total interstate shipments of Tokays in 1932 were 3,982 cars.

Reduction in shipments of table grapes from California in 1933 as compared with 1932 was partly due to the short 1933 crop and partly to the revival of a demand for a considerable tonnage of these grapes by California wineries stocking their cellars for the anticipated demand for wines and brandy after repeal. A slight improvement in apparent demand over 1932 helps to account for better prices for California table grapes in eastern markets in 1933 than in 1932, but the decreased quantity of table grapes actually shipped from the state seems to have been of most importance, together with the assurance that only a small total quantity was produced and available for such shipments.

Although table-grape shipments were unusually small in 1932, the quantity unharvested, about 108,000 tons, was so large that prices in eastern markets were probably somewhat lower than they would have been with the same actual shipments had no additional supplies been available for shipment for California in addition to the quantity actually shipped. Prices of the chief varieties of California table grapes, including the Thompson Seedless variety, in eastern delivered auction markets (through October 28) averaged 17 cents a package more in 1933 than in 1932. As a result of these higher prices in eastern markets and a small decline in freight and refrigeration rates, California growers appear to have gotten a farm price from eastern shipments of about \$15 more a ton in 1933 than in 1932. Malagas averaged \$1.15 a package in eastern markets (through November, 1933) as compared with only \$0.90 in 1932, while Tokays averaged \$1.22 in contrast to \$1.10 in 1932, and Thompson Seedless \$1.38 as compared with \$1.27 in 1932. Wineries in the San Joaquin Valley generally paid about \$10 a ton delivered for Tokays and Malagas for crushing.

Not only has the demand for Malagas for juice purposes declined greatly in eastern markets in recent years, but also the demand for this variety for table stock has suffered because of the popularity of the Thompson Seedless as a table grape. For several years, the Thompson Seedless has sold in eastern markets at prices equal to, or better than, those of other important table varieties. In order to continue to maintain

satisfactory prices for Thompson Seedless table grapes, care should be exercised not to glut eastern markets by shipping too many of them. Only well-packed fruit of the best table quality should be shipped. Only about 3,300 carloads left the state in 1933 as compared with about 4,000 carloads in 1932, 3,200 in 1931, and 4,900 in 1930.

PEACHES

Clingstones.—Production of clingstone peaches in California has definitely passed the peak and is now declining. This downward trend is likely to continue for at least four or five years, although at a slower rate than that of the past two years. Approximately 97 per cent of the acreage in the state is now in bearing, while about 78 per cent is in full bearing. The decrease in yields on the older acreage, together with the normal removal of trees due to old age, is not likely to be offset fully by the increase in yields on the nonbearing and young-bearing acreage.

Since 1928 there has been a sharp decrease in the total acreage north of the Tehachapi of Tuscons, New Midsummers, and Phillips (the only varieties now used for canning). The net decrease in total acreage of these three varieties between 1928 and 1930 amounted to 5,159 acres; 7,041 acres were removed and 1,882 acres were planted. Between 1930 and 1932 only 169 acres were planted while 13,329 acres were removed or abandoned, making a net decrease of 13,160 acres. In the winter of 1932-33 approximately 6,900 acres were removed or abandoned. Thus the net decrease in the total acreage of these three varieties between 1928 and 1933 amounted to about 25,200 acres.

Prior to 1932 the removal of older trees was offset to a considerable extent by young trees coming into bearing. The acreage four years of age and older was only 12 per cent smaller in 1932 than in 1928, whereas the total acreage was 27 per cent smaller. The decrease in total acreage of 6,900 acres between 1932 and 1933, however, meant a decrease in bearing acreage of 6,400 acres since only 500 acres of new orchards came into bearing in 1933.

The bulk of the clingstone-peach acreage in the state is now at the age of maximum bearing capacity. In 1933, about 66 per cent of the acreage was from eight to thirteen years of age, 12 per cent fourteen years of age and older, 19 per cent from four to seven years of age, and 3 per cent less than four years of age. Thus, six years hence 66 per cent of the present acreage will be from fourteen to nineteen years of age and will be declining in productivity; 12 per cent will normally have been removed; while 22 per cent will be at maximum production. During this period the in-

crease in yields on the present nonbearing and young-bearing acreage will normally about offset the decrease in yields on the acreage now at maximum production, with the result that total production will be reduced to the extent that acreage is removed.

The prospects are that the trend of production during the next five or six years will be slowly downward. From the beginning of the clingstone-peach industry in this state up to 1931 the trend of production was always upward; but in 1932 it turned sharply downward; and with the removal and abandonment of considerable acreage in 1932-33, it was further reduced. With relatively favorable returns for clingstone peaches in 1933, the incentive for further larger removals of trees has disappeared at least for the time being. Some orchards that were abandoned in 1933 may be brought back into production. It is probable that many orchards will receive better care in 1933-34 than they have at any time since 1930-31. These conditions, if continued, will retard the rapid decrease in the trend of production of the past two years, although they are not likely to stop it entirely and certainly cannot be expected to cause the trend to turn upward.

The period of rapidly decreasing production from the present planted acreage is likely to begin about 1940. During the four or five years thereafter about 20,000 acres will normally be taken out. Unless an equivalent amount of new acreage comes into bearing during those years, production may be reduced nearly 50 per cent. Since a peach orchard usually comes into commercial production at four years of age, trees which are to start bearing in 1940 should be planted in 1936. In 1934 and 1935, relatively small plantings—not to exceed 1,000 acres a year—will be sufficient to offset normal removals at the time they come into bearing, but thereafter increasingly larger plantings will be necessary.

In 1930 and 1931, when voluntary industry-control programs were in operation, the surplus peaches were purchased and left on the trees. In this way the prices to growers for No. 1 fruit were maintained at \$20.00 and \$14.50 a ton respectively for fruit delivered to canners, and at those prices less the cost of picking and hauling for fruit purchased and left on the trees. In 1932, however, a control program was not undertaken. Prices to growers that year for No. 1 fruit delivered to canners averaged \$6.50 a ton and large quantities were dropped prior to thinning and at maturity for which growers received no returns. In 1933, canners entered into a marketing agreement with the Secretary of Agriculture in accordance with the provisions of the Agricultural Adjustment Act. The price paid growers for No. 1 fruit was \$20 a ton on a harvested basis and \$15 a ton on an unharvested basis.

The carryover of canned peaches on June 1, 1933, amounted to 1,361,000 cases, a distinct contrast to the excessive carryover of 4,845,000 cases a year earlier. Total shipments in 1932-33 amounted to 9,922,000 cases as against only 7,527,000 cases in 1931-32. Cannery selling prices in 1932-33, however, were very low, averaging only \$1.10 a dozen cans of No. 2½ Choice as against \$1.48 a dozen cans in 1931-32. Since August 17, 1933, prices on No. 2½ Choice have been \$1.30 a dozen cans, which is 66 per cent as high as the 1924-1928 average. Canned pineapples are now selling at 79 per cent of their 1924-1928 average price, canned apricots at 64 per cent, and canned pears at 55 per cent. Thus, as compared with the 1924-1928 average, prices of canned peaches are low in relation to the prices of canned pineapples, about the same as the relative prices of canned apricots, but high in relation to the prices of canned pears.

Exports of canned peaches to the United Kingdom, our most important foreign market, have been affected adversely since November 17, 1932, by the import duty of 15 per cent ad valorem which went into effect on that date. In recent months, however, the decline in the value of the United States dollar in terms of English pound sterling has more than offset the effect of the increased import duty.

The Canadian market formerly provided an outlet for around 150,000 cases of canned peaches annually. In August, 1931, Canada placed a general import duty of 5 cents a pound on canned fruit, and United States exports of canned peaches to Canada were drastically reduced, amounting to only 9,711 cases in 1931-32 and 9,841 cases in 1932-33.

Freestones—The trend of freestone-peach production in California has been decreasing at an average rate of about 2,000 tons a year since 1921. The available information indicates that during the next five years the trend of production will continue downward.

In 1933, the total acreage of freestones in California amounted to 57,700 acres, of which 53,900 acres or 93 per cent were in bearing and 3,800 acres or 7 per cent were nonbearing. This small nonbearing acreage is not sufficient to offset the acreage that normally will be taken out during the next few years. In 1928, the nonbearing acreage amounted to 8,800 acres, yet that amount was no more than sufficient to maintain the bearing acreage during the period 1929-1932 at the 1929 level. The average age of the freestone-peach trees in orchards in 1933 was considerably older than the average in 1929, and at that time about 64 per cent of the trees were eleven years of age and older. The available information points strongly toward the probability that the bearing acreage of freestone peaches in this state five years hence will be substantially

below that now in bearing, and that the average yield per acre will be below the present average because of the decline in productivity of a considerable proportion of the acreage due to old age.

Virtually all of the decrease in production of freestones in California during the past decade was in fruit used for canning. During the five years 1921–1925 an average of 27,800 tons was canned, whereas during the five years 1928–1932 an average of only 3,600 tons was canned. In the former five-year period an average of 127,400 tons of freestones was dried and an average of 55,200 tons shipped fresh, while in the latter five-year period an average of 123,420 tons was dried and an average of 66,580 tons shipped fresh.

From 1921 to 1929 there was no downward trend in prices of dried peaches, a distinct contrast to the situation that prevailed in most other deciduous fruits. During those nine years the production of dried peaches did not increase and the demand for them remained fairly constant. Packers' quotations on Choice Muirs averaged around 11.0 cents a pound during that period. With the pronounced decrease in the buying power of consumers and the sharp decline in the general price level, prices in 1931 fell to 6.8 cents a pound and in 1932 to 4.7 cents a pound. Beginning in April, 1933, prices advanced steadily, reaching 7.9 cents a pound in October and remained at about that level through November.

Exports of dried peaches in 1932–33 amounted to 3,825 tons as against 4,245 tons in 1931–32 and an average of 3,827 tons during the previous five years. During the past ten years an average of 16 per cent of the total output of dried peaches has been exported.

Interstate shipments of peaches from California in 1933 were small, amounting to only 1,942 cars as against 3,280 cars in 1932, and an average of 3,330 cars during the five years 1927–1931. Although prices of California Elberta peaches in eastern markets averaged about 20 per cent higher in 1933 than in 1932, they were 12 per cent lower than in 1931, and 20 per cent below the 1927–1931 average.

Although supplies of fresh peaches from other states in eastern markets during the 1933 California shipping season were below the average of recent years, they were much heavier than in 1932 when the crop in the southern states was radically reduced by adverse weather conditions. Total carlot shipments of peaches from all states other than California during the two months of July and August amounted to 12,132 cars in 1933 as against 6,409 cars in 1932 and an average of 20,912 cars during the five years 1927–1931.

The peak in the upward trend of fresh-peach production in the United States, which began about 1920, was reached in 1926. Since 1926 the trend has been downward. The available information indicates that the trend is likely to continue downward for several more years. In the southern states the rate of commercial plantings has been relatively low for the past six years, averaging annually about 4 per cent of the present number of trees. Since the average life of a peach orchard in the South is about fourteen years, it requires a rate of planting of about 7 per cent of the present number of trees to prevent a downward trend in acreage. The period of heavy plantings of peach trees in the South was from 1921 to 1924, and these trees will be from ten to thirteen years old in 1934. By 1938 most of them will be out of production. In the main fresh-producing sections outside of the southern states no definite upward or downward trend in production is apparent.

PEARS

The bearing acreage of pears on the Pacific Coast is still increasing so that further expansion of production and a continuation of burdensome surpluses may normally be expected during the next few years unless blight, black-end, economic difficulties, or some unexpected factor takes unusually heavy toll from the industry. The slow decline in bearing acreage and normal production of pears outside of the Pacific Coast is not likely to help the market for California Bartletts noticeably, since eastern pears are not directly competitive with Pacific Coast Bartletts. The prospects for late varieties of pears during the next few years appear to be more discouraging than for Bartletts, for their normal production on the Pacific Coast will probably increase at a faster rate than Bartletts during the next few years and there seem to be greater difficulties involved in increasing the demand for these varieties than for Bartletts. The prospects for large surpluses of pears are leading the industry to attempt to unite in a coast-wide organization for some form of artificial curtailment of supplies.

Preliminary estimates indicate that about 42,000 acres of pears were in bearing in Oregon and Washington in 1933 and almost 71,000 acres in California, or nearly double the acreage of ten years ago. Approximately 8,000 acres are not yet in bearing in the Pacific Northwest and nearly 10,000 acres in California. Since 1929, however, at least 10,000 acres, mostly Bartletts, have been abandoned or pulled in California, largely as a result of the blight epidemic of 1930. Under the economic conditions likely to prevail in the industry during the next few years

still further reduction in acreage undoubtedly will, and should, take place, for many growers in certain sections of the state normally produce such low yields or such an inferior quality of pears that it will be to their advantage to discontinue pear growing as a commercial enterprise. However, growers will probably have to suffer a few years more of very low prices before any substantial decrease in acreage may be expected.

Spring frosts and hot weather reduced the 1933 California pear crop about 10 per cent below normal. The preliminary (November 1) estimate of 221,000 tons compares with 238,000 tons in 1932, which was just about a normal crop. Most of the California crop of 1933, except culls and dropped pears, which were plentiful, were disposed of in commercial channels, while in 1932 approximately 60,000 tons were not harvested. About 15,000 tons were unharvested out of the 218,000 tons produced in 1931, and about 31,000 tons of the 272,000 ton crop of 1930 (the largest on record).

Preliminary estimates (November 1) indicate a United States pear crop of 512,000 tons of which the Pacific Coast accounts for 389,000 tons. California production was 221,000 tons, and Oregon, Washington, and Idaho production combined was 168,000 tons. United States production (harvested and unharvested) in 1932 was 529,000 tons; in 1931, 560,000 tons; and in 1930, 615,000 tons. California pear production in 1933 was about 43 per cent of the national crop as compared with 45 per cent in 1932, 39 per cent in 1931, and 44 per cent in 1930. California, Oregon, and Washington together contributed about 77 per cent in 1933 in comparison with 75 per cent in 1932, 63 per cent in 1931, and 74 per cent in 1930.

California pear yields in 1933 were about 3.1 tons per acre (preliminary estimate, November 1) as compared with a ten-year average of 3.5 tons per acre. Whether average yields per acre will remain about the same as the average of the past ten years is uncertain because two important changes working in opposite directions are taking place in the industry. On the one hand, as the young-bearing acreage comes into heavier bearing, yields per acre are tending to increase. Since approximately one-half of the present bearing acreage has been in bearing only about ten years, the potential increase in yields per tree from a long-lived, slow-growing tree like the pear is significant. On the other hand, if growers have to practice drastic economies in cultural operations in order to make both ends meet, average yields per acre may not increase. Although the net result of these two counteracting influences on yields per acre cannot be predicted with accuracy, there is little doubt that yields and

average crops larger than in 1933 or about as large as in 1932, possibly larger, will be the rule in the near future, barring serious blight epidemics or other unforeseen events.

Fresh Bartletts.—Of the total of about 113,000 bearing acres of pears on the Pacific Coast, nearly 75 per cent are Bartletts and 25 per cent other varieties, which, with the major exception of the Beurre Hardy, are harvested too late to compete with most California Bartletts. In California the 61,000 acres of bearing Bartletts in 1933 constituted about 86 per cent of the bearing acreage of all varieties. In Oregon and Washington about 55 per cent of the bearing acreage is in Bartletts. Of about 69,000 acres of Bartlett trees in California in 1933, slightly less than 8,000 acres were not yet in bearing or slightly over 11 per cent of the total as compared with about 16 per cent of a total of approximately 11,500 acres of other varieties of pears. In the Pacific Northwest the percentage of late pears still to come in bearing is also larger than for Bartletts.

Rough estimates indicate that the average production of Bartletts on the Pacific Coast was about 300,000 tons during the years 1928, 1930, 1931, and 1932. Crops at least as large are normally to be expected for the next few years, of which California may produce about two-thirds, as in recent years. According to trade estimates, the 1933 Pacific Coast Bartlett crop was probably in the neighborhood of 275,000 tons, of which California contributed in the neighborhood of perhaps 180,000 tons.

Nearly all of the tonnage of pears utilized for commercial canning and drying in the United States are Pacific Coast Bartletts. The drying industry has been confined to California alone, which utilizes about 25,000 tons of Bartletts annually for this purpose. Of an average of about 100,000 tons of pears canned on the Pacific Coast in recent years, about half were California Bartletts and the other half from Oregon and Washington. Exact data on fresh shipments of Bartletts from the Pacific Coast are not available but they have probably averaged 100,000 tons or more in recent years, the majority originating in California. Possibly a third as many more were consumed fresh in the coast states themselves.

Prices for fresh-Bartlett shipments to eastern markets and gross returns to California growers in 1933 were considerably better than in 1932, almost entirely as a result of lighter shipments, for the level of eastern demand for Bartletts was only just about the same as in 1932. Judging by eastern delivered auction prices, which averaged about \$2.25 a box in 1933 as compared with \$1.93 in 1932, growers' returns on shipments to the East were about \$25.00 a ton in 1933 as compared with about \$8.00 in 1932. It is estimated that California's growers received

about \$1,000,000 more for the quantity shipped east than they did in 1932 although about 1,000 cars less were shipped in 1933. Although Pacific Northwest fresh-Bartlett shipments in 1933 returned growers something besides the "red ink" of the 1932 season, grower prices were again, as in 1932, below the prevailing price of canning Bartletts. Such poor returns from eastern shipments as compared with canning prices are naturally leading growers in Oregon and Washington to prefer selling to canneries, which tends to increase the Northwest canned-Bartlett pack and, hence, the competition with California canned Bartletts.

Changes in the transcontinental-railroad-freight tariffs on pears resulted in somewhat heavier loading of shipments east of Chicago in 1933, making it more difficult to estimate the number of standard carloads (of 520 boxes) of California Bartletts shipped out of the state. About 1,000 carloads less of California Bartletts moved to eastern and export markets than in 1932, when the movement is estimated at not over 5,500 carloads. Reduction in shipments was largely the result of a smaller crop together with more purchases of Bartletts for canning from shipping sections than in 1932.

Exports of pears from the United States to foreign countries from the 1933 crop declined greatly from the high figure of 1932. Exports for the 3 months of July, August, and September, which consist largely of California Bartletts, amounted to 16,700 tons in 1933 as compared with 27,700 tons for the corresponding months in 1932 and 24,600 in 1931. Of the total exports for these 3 months in 1933 about 64 per cent went to the United Kingdom and 17 per cent to Canada.

Canning Bartletts.—Largely because of the very small carryover of canned Bartletts and a smaller crop than in 1932, Pacific Coast canning Bartletts brought an average of about \$5 a ton more in 1933 than in 1932. Prices most generally offered by canners in both California and the Pacific Northwest were \$15 for No. 1 canning Bartletts and \$10 for No. 2's. Some were sold at higher prices, judging by reports from the Sacramento River district, Lake, and Mendocino counties, and the Rogue River Valley in Oregon. Average returns for Pacific Coast canning Bartletts in 1933 appear, therefore, to have been between \$15 and \$20 a ton.

Commercial canning of pears in the United States is usually confined to Pacific Coast Bartletts. The canned pack on the Pacific Coast averaged nearly 4,000,000 cases a year in 1928, 1930, and 1931, utilizing an average of approximately 105,000 tons, or about 37 per cent of the harvested Bartlett tonnage. The tonnage canned during these years averaged approximately 25 per cent of the California harvested Bartlett crop, and about 60 per cent of the Pacific Northwest crop. Ten years ago Oregon

and Washington contributed only about 25 per cent of the Pacific Coast canned-pear pack, but during the three years 1928, 1930, and 1931 their contribution averaged just 50 per cent of the total, and in 1932 and probably also in 1933, somewhat more.

Rough trade estimates (November 8, 1933), indicate that about 4,000,000 cases of Bartletts were canned on the Pacific Coast in 1933, or about 25 per cent greater than in 1932 but just about the average for the years 1928, 1930, and 1931. California probably contributed somewhat less than half of the 1933 pack, which probably utilized about 105,000 tons of Bartletts. Low returns from eastern sales of Pacific Northwest fresh-Bartlett shipments during the last two years are resulting in that section's diverting a larger proportion of its pears into canning, with consequently greater competition for California canning Bartletts.

Although the stock of 429,000 cases of canned Bartletts in canners' hands on June 1, 1933, was the smallest carryover in the last four years, total supplies available for shipment during the 1933-34 marketing season were nearly as large as the 4,500,000-case average of the last five years, if 4,000,000 cases were actually canned on the Pacific Coast in 1933, as now estimated. Available supplies, therefore, appear to be greater than the maximum ever shipped in one year—4,216,000 cases during the 1930-31 season. Average annual shipments during the five years 1928-1932 were approximately 3,800,000 cases. Pacific Coast canner's shipments for the season beginning June 1, 1932, of 3,550,000 cases sold at an average of only \$2.48 a case, the lowest price since the War. In 1931, shipments of 3,672,000 cases sold for \$2.64 a case, and in 1930, 4,216,000 cases brought \$3.54 a case. The large supplies of canned Bartletts available for marketing during the 1933-34 season, largely account for the fact that opening canned-pear prices were just about the same as a year ago, whereas prices of canned peaches, apricots, and pineapples have been considerably higher than they were a year ago.

The available data show that the extremely low canned-pear prices for the 1931-32 and 1932-33 season were not due primarily to increased supplies and shipments of Pacific Coast canned pears or, to any extent, of other canned fruits. Rather they have been due chiefly to the decline in the general level of all-commodity prices and to the greatly reduced demand resulting from the low purchasing power attendant upon widespread unemployment in the United States and the United Kingdom, the two countries which consume at least 95 per cent of the world output of canned pears. The adverse exchange rate for the pound sterling prevailing during most of the last two canned-pear marketing seasons has also restricted our sales and lowered the prices at which we have been

able to sell in the British market. In addition, the United Kingdom, which has taken 90 per cent of our canned-pear exports in recent years, on November 17, 1932, added a 15 per cent ad valorem duty on imports of our canned pears. This duty, the equivalent of a tax of \$15 to \$20 a ton on the canning pears which enter that market in cans, with exchange rates at par, is undoubtedly the chief cause of the decline in United States exports of canned pears from 1,681,000 cases in 1931-32 to 1,381,000 cases in 1932-33.

Late Varieties.—Prospects for late varieties of pears appear to be more discouraging than for Bartletts, for normal production on the Pacific Coast will probably increase at a faster rate than Bartlett production during the next few years and there seem to be greater difficulties involved in marketing late varieties and increasing the demand for them than in the case of Bartletts. Production has increased so rapidly that rail shipments of late pears from the Pacific Coast are now normally about four times as great as they were ten years ago, or, on the whole larger than the consumptive capacity of domestic and foreign markets in recent years at prices that would return packing, transportation, storage, and marketing costs. With the percentage of late-pear trees still to come into full bearing larger than for Bartletts, both in California and the Pacific Northwest, a continuation of burdensome surpluses in normal crop years appears certain unless a surplus-control plan is put into effect which artificially curtails shipments or reduces the acreage. Well over one-third of the late-pear acreage on the Pacific Coast is either of nonbearing or of young-bearing age.

PLUMS

The peak of plum production in California has probably been reached. During the next few years production is likely to fluctuate around the present level or tend slowly downward.

The total acreage of plums in California in 1933 amounted to 34,300 acres as against 36,700 acres in 1929, a decrease of 2,400 acres or 7 per cent. The bearing acreage in 1933 of 31,700 acres was, however, only 800 acres smaller than in 1929. The nonbearing acreage which came into bearing during this period offset, to a considerable extent, the removal of old trees. Plantings of plums during recent years have been small. The nonbearing acreage in 1933 amounted to only 2,600 acres. This amount is hardly sufficient to offset removals due to old age in the next five years. Consequently, some decline in bearing acreage is to be expected.

From 1919 to 1926 there was a sharp upward trend in plum production in this state, rising from 37,000 tons to 60,000 tons, an average increase of about 300 tons a year. From 1926 to 1931 the increase was much smaller, amounting to only 100 tons a year. Since 1931 there has been no further rise; instead the trend of production has remained at 65,000 tons, its position in 1931. Unless there is a heavy removal of bearing trees or considerable neglect of orchards resulting in reduced yields per acre, only a small decrease in plum production in California is in prospect during the next five years. The increase in yields on the present non-bearing and young-bearing acreage may offset most of the decrease in production on the old trees.

The 1933 production of plums in California is now estimated at 59,000 tons as against 68,000 tons in 1932, and an average of 64,000 tons during the five years 1928-1932. Yields per acre in 1933 were below average. The condition of the crop was 68 per cent of normal as compared with the 1921-1932 average of 74 per cent.

In recent years about 97 per cent of the plums produced in California have been shipped fresh while about 3 per cent have been canned. California fresh plums meet little competition from those produced in other sections of the United States, since shipments from other states do not usually reach the markets in considerable volume until the California shipping season is over. Our canned plums, however, come in direct competition with those packed in the Pacific Northwest.

Interstate shipments of plums from California amounted to 3,361 cars in 1933 as against 3,887 cars in 1932, 3,967 cars in 1931, and an average of 4,505 cars during the five years 1926-1930. From 1922 to 1930 there was a sharp upward trend in interstate shipments, but since 1930 there has been no further increase. In fact, shipments during each of the past three years have been below the position of the trend in 1930. In both 1931 and 1932 considerable tonnage was unharvested because of low prices, while in 1933 yields per acre were below average. The present acreage will, in years of average or better than average yields, produce a sufficient quantity of plums to permit substantially heavier shipments to eastern markets than have been made in the past three years.

Despite the upward trend in interstate shipments of California plums between 1922 and 1930 there was no downward trend in prices. The demand for fresh plums in the eastern markets during those years kept pace with the increase in shipments. In each of the past three years, however, prices have been much below the former level. The f.o.b. price of the eleven principal varieties of plums for the three years 1931-1933

averaged \$0.69 a crate as against an average of \$1.10 a crate during the five years 1926-1930, despite the fact that the average interstate shipments for 1931-1933 were 17 per cent below the 1926-1930 average.

In 1933 the average f.o.b. price of the eleven principal varieties of plums was \$0.70 a crate as against \$0.61 a crate in 1932, an increase of 15 per cent. The primary cause of this higher price was the decrease in shipments, which amounted to 14 per cent. As nearly as can be judged from an analysis of the available data, the level of demand for California fresh plums was about the same in 1933 as in 1932. In both years the demand, measured in terms of prices, was about \$0.20 a crate below that prevailing in 1931 and about \$0.50 a crate below the 1926-1930 average.

From 1928 to 1932 an average of 2,140 tons of plums produced in California was canned, which constituted 3 per cent of the total production. Between 1921 and 1930 the canned pack in this state fluctuated around 160,000 cases, but no definite upward or downward trend occurred. In the Pacific Northwest, however, the combined pack of plums and prunes increased from an average of 225,000 cases in 1921-1923 to an average of 803,000 cases in 1928-1930. The resulting total increase in the Pacific Coast pack was primarily responsible for the downward trend in the opening prices of California canned plums which fell from an average of \$2.00 a dozen cans of No. 2½ Choice (advertised brands) in 1921-1923 to an average of \$1.82 a dozen cans in 1928-1930. In both 1931 and 1932, prices continued downward despite a substantial curtailment in the pack. Opening prices for the 1933 pack, however, were above the opening prices for the 1932 pack, No. 2½ Choice plums being \$0.10 higher per dozen cans.

PRUNES

For several years normal world prune crops will probably be larger than the average of the last five years. Only a slow decrease in bearing acreage and production in California, Oregon, Washington, and France is to be expected while indications are that the exportable surplus of Jugoslavian prunes is on the upward trend after the unusually small crops of 1929, 1930, and 1931. Ordinarily, therefore, domestic supplies of prunes may be plentiful during the next few years, and competition from Jugoslavian prunes in export markets keener. In addition, our exports to Germany, formerly one of our best foreign markets, are confronted with greatly increased import duties and serious government restrictions on the amount of foreign exchange available for importing into Germany.

At yields of 1.25 tons per acre, the approximate average in recent years, the 1933 bearing acreage of prunes in California would normally produce about 210,000 tons of dried prunes. Normal production of the other important commercial prune-producing areas of the world—Yugoslavia, France, and the Pacific Northwest—appears to be about 60,000 tons. It therefore seems that we may expect normal world crops during the next few years about as large as the tonnage consumed annually at the peak of supplies in the years 1927, 1928, and 1930.

Normal crops of California prunes during the next few years are likely to be somewhat larger than the crops of 1932 and 1933, since the condition of the crop in those years was about 15 per cent below the ten-year average and bearing acreage will probably decline but slowly. The peak of the bearing acreage of prunes in the state was not reached until 1931, and there has been a decline of only 3,000 bearing acres since then. Nearly 6 per cent of the total acreage, or 10,000 acres, is not yet in bearing. At least 85 per cent of the bearing acreage is now over thirteen years of age, and hence capable of bearing heavy yields per acre in years when normal conditions govern productivity.

The trend of normal yields per bearing acreage has risen considerably during the last ten years as the proportion of the acreage approaching full-bearing age has increased. Yields per bearing acre for the six years, 1921–1926, which fluctuated but little from year to year, averaged nearly 1.1 dried tons per acre, according to the official data of the California Coöperative Crop Reporting Service. During the five years, 1927–1931, the average was nearly 1.25 dried tons. State yields per acre were only about 1.1 tons per acre in 1933 and production about 186,000 tons (November 1 estimate) as compared with 172,000 tons in 1932, of which 4,000 tons were unharvested, and an average of 206,000 tons for the years 1927–1931.

The November 1 estimate of the 1933 dried-prune crop of Oregon and Washington was about 17,000 tons, nearly all produced in Oregon. Production in 1932 amounted to 23,000 dry tons of harvested prunes as compared with about 31,000 tons in each of the two preceding years. The 1929 crop was the largest ever produced, 58,400 tons, all harvested, while the 1928 crop was the smallest since the War, only 6,400 tons. Although bearing acreage is likely to decline somewhat in the next few years, normal production for some time may be about the average of the crops of 1930, 1931, and 1932. However, changing weather conditions may cause as much fluctuation from year to year as they have in the past.

Preliminary estimates (November 1) indicate the 1933 commercial dried-prune crop of the world to have been about 240,000 tons, or approximately the same as the average of the preceding five years, and somewhat larger than the 1932 crop of 223,000 tons. Since the increase in world production appears to have been about the same as the decrease in California carryover from September 1, 1932 to September 1, 1933, world supplies in sight for the 1933-34 marketing season on September 1, 1933, were just about the same as for the previous year, or about 20,000 tons greater than apparent world consumption during the 1932-33 marketing season. The prune crops of California and France appear to have been slightly larger in 1933 than in 1932, the Jugoslavian exportable surplus about the same, or possibly slightly smaller, and the Pacific Northwest somewhat smaller.

Apparent world consumption of all dried prunes during the 1932-33 marketing season amounted to between 220,000 tons and 230,000 tons as compared with about 242,000 tons in 1931-32. California contributed between 170,000 and 180,000 tons of this total in 1932-33 in contrast with about 204,000 tons during the 1931-32 marketing season. The total contributed by the United States as a whole was between 190,000 and 200,000 in 1932-33 and about 228,000 tons in 1931-32, when France and Jugoslavia had only about 14,000 tons to sell as compared with about 32,000 tons in 1931-32. Prune consumption within the United States in 1932-33 was reduced to about 100,000 tons or about 10,000 less than in 1931-32.

Total United States exports of prunes to foreign countries (excluding those in dried-fruit salad) amounted to only 92,208 tons in 1932-33 or about 25,000 tons less than in 1931-32. The average of the preceding five years was nearly 123,000 tons. Higher export prices for our prunes than in 1931-32, increased competition resulting from the bigger Jugoslavian prune crop, and higher tariffs and more trade restrictions on prunes entering several of our most important markets, as well as generally adverse economic conditions abroad, largely account for the big reduction in our exports. Most of these same factors will probably operate to restrict our prune-export business during the 1933-34 marketing season. European prune production now appears to be about 6,000 tons greater than in 1932. German foreign exchange available for importing is being rigidly restricted, and, in addition, the import duty on prunes was raised on August 17, 1933, from \$1.45 a hundred pounds (at par) to \$4.40 on prunes in bags, and from \$2.90 a hundred pounds in boxes to \$7.35. On the other hand, our export prices in terms of foreign money have been only about as high as those of last year, even though they have been substantially higher in terms of dollars.

The net base price at which packers are reported to have bought 1933 Santa Clara French prunes of sizes larger than 81's averaged between $3\frac{1}{2}$ and $3\frac{5}{8}$ cents a pound from July through November as compared with slightly less than $2\frac{1}{4}$ cents for most of the 1932 crop. Actual prices to growers for 60's, a fairly representative size of French prunes, would be about 1 cent a pound higher than these base prices.

Foreign Situation.—Although Jugoslavian production of all prunes and exports of dried prunes have decreased greatly in recent years, the trend of bearing acreage, production, and exports will probably be upward during the next decade, as a result of recent plantings and improved orchard sanitation. Exports of dried prunes during the next few years may usually be nearer the 30,000 tons now predicted from the 1933 crop than the 10,000-ton average for the three crop years 1929–1931. The decline during the decade ending in 1931 was caused chiefly by the loss of many trees and greatly reduced yields per tree resulting from the rapid spread of brown apricot scale (*Lecanium corni*). Moreover, unfavorable weather conditions also reduced yields for a few years just prior to 1932. From 1922 to 1931 the number of prune trees in Jugoslavia declined from about 60 million to 39 million. More than 12 million old and diseased trees were uprooted by government order between 1929 and 1931 while about 1 million young trees were planted. Plantings are expected to continue since they are being advocated by the government, which has nurseries equipped to supply the peasants with improved stock. Moreover, methods of orchard sanitation are being broadcasted and equipment for combating pests has been placed within reach of the peasant farmers. Since some of the recent plantings have been made with the fresh-shipping outlet in view, exports of dried prunes are not likely to increase as rapidly as total production of all prunes.

From the post-war peak of over 1,000,000 fresh tons in 1925 and 1926, Jugoslavian prune production fell steadily until it amounted to only a little over 400,000 fresh tons in 1929. Likewise, exports of dried prunes declined from about 50,000 dried tons a year from the crops of 1925 and 1926 to an average of only about 10,000 dried tons for 1929, 1930, and 1931. Part of this decline in dried-prune exports is accounted for by the rapid increase in fresh-prune exports from Jugoslavia in recent years. From an average of less than 10,000 fresh tons a year previous to 1926, fresh-prune exports rose to approximately 36,000 fresh tons in 1930 and 1931. Total production in 1932 was approximately 550,000 tons from which were exported about 3,300 tons of plum jam, 32,000 tons of fresh prunes, and 29,000 tons of dried prunes. November 1 estimates of the exportable surplus of dried prunes from the 1933 crop range from 25,000

to 30,000 tons. When Jugoslavian exports are as large as those from the 1932 crop and those in prospect from the 1933 crop, California meets direct competition from the large tonnage of them sold in Central European markets, particularly in Germany, formerly our most important export outlet for prunes. Of the 29,000 tons of dried prunes exported from the 1932 Jugoslavian crop, Germany imported about 9,200 as compared with less than 500 tons from the 9,500 tons exported from the small 1931 crop.

The tonnage of prunes produced in France usually fluctuates greatly from season to season. Preliminary estimates (November 1) indicate a 1933 crop of about 7,500 tons, or close to the average of recent years. The 1932 crop, one of the smallest in recent years, was only 2,500 tons and the 1930 crop, the largest in recent years, was 17,000 tons.

In spite of the encouragement afforded the French prune industry by high import duties amounting to 2.85 cents a pound, with foreign exchange at par, on large unprocessed prunes and packed prunes and 2.16 cents a pound on all unpacked prunes and sizes smaller than 60/70's, it is generally believed that future production in France will not average any greater than in recent years. Moreover, although high import duties will undoubtedly restrict imports somewhat, France is likely to continue to be on a substantial import basis, taking a large majority of her supplies from California, as in the past. During the five years, 1927-1931, when their home production averaged 7,000 dried tons, the French people consumed approximately 27,000 dried tons of prunes annually, of which about 19,000 dried tons came from the United States. Nearly 16 per cent of our total exports of prunes was absorbed by France during that period. French consumption of our prunes has been fairly well maintained during the last three years. During the year beginning September 1, 1932, United States exports of prunes to France amounted to 21,602 tons as compared with 23,022 tons in 1931, 23,757 tons in 1930, and 27,711 tons in 1928, the year of our maximum exports to France.

GRAPEFRUIT

The trend of world grapefruit production is sharply upward. Larger crops are in prospect during the next few years in the United States, Puerto Rico, Isle of Pines, South Africa, Palestine, Jamaica, Brazil, and Argentina. Export outlets for United States grapefruit are being restricted by increasing supplies from other countries and by rising tariff barriers. During the past three years large supplies available for

the domestic markets, together with the reduced buying power of consumers, have resulted in very low prices to producers.

The total acreage of grapefruit in the United States now amounts to about 212,000 acres, of which 151,000 acres or 71 per cent is in bearing and 61,000 acres or 29 per cent nonbearing. The bulk of the bearing acreage is not yet in full production. Only about 25 per cent is as much as fifteen years old, while about 50 per cent is between five and ten years old. Thus, with approximately half of the bearing grapefruit trees under ten years of age and with nearly one tree of nonbearing age to every two bearing trees in groves, it is evident that the upward trend in production that has been underway since the beginning of the industry will continue for some years.

Florida now has about 90,000 acres of grapefruit of which about 9 per cent is nonbearing, while about 47 per cent of the 92,000 acres in Texas is nonbearing. The combined acreage in California and Arizona totals 30,000 acres of which about 33 per cent is nonbearing.

Most of the plantings of grapefruit in California during the past decade were in the Imperial and Coachella valleys. The shipment of their fruit occurs at the same time as that from Florida, Texas, and Arizona. In the past few years, plantings of grapefruit in San Bernardino and Los Angeles counties, for shipment during the summer months, have been relatively heavy. In 1932, approximately 25 per cent of the grapefruit acreage in those two counties were nonbearing.

Total production of grapefruit in the United States in 1932-33 amounted to 15,821,000 boxes as against 15,147,000 boxes in 1931-32 and an average of 13,222,000 boxes during the five years 1927-28 to 1931-32. As a result of storms in September, which reduced grapefruit-crop prospects 88 per cent in Texas and 25 per cent in Florida, production in 1933-34 is now estimated to be about 17 per cent less than that of 1932-33.

Exports of grapefruit from the United States amounted to 905,000 boxes in 1932-33, as against 1,119,000 boxes in 1931-32, 1,361,000 boxes in 1930-31, and an average of 998,000 boxes during the five years 1927-28 to 1931-32. On the average, about 95 per cent of the grapefruit exported from the United States has gone to the United Kingdom and Canada. Since November, 1932, the United Kingdom has had a duty of 10 per cent ad valorem on foreign grapefruit imported during the months of December through March and of 5 shillings per 112 pounds for the period April through November. In Canada the import duty on United States grapefruit is \$0.70 a box. Grapefruit produced in British Empire countries is permitted to enter both the United Kingdom and

Canada duty free. The trends of grapefruit production in the Empire countries of the Union of South Africa, Jamaica, and Palestine are sharply upward.

In 1932-33 the average f.o.b. price received for California grapefruit shipped during the six months November to April was \$1.49 a box as against \$1.66 a box in 1931-32 and \$2.23 a box in 1930-31. F.o.b. prices of summer grapefruit, however, were higher in 1933 than in either 1932 or 1931. California shipments of grapefruit during the three months July to September were about the same in 1933 as in 1932. Those from Florida, however, were much larger and more than offset the greatly reduced supplies from Puerto Rico. The United States supply of grapefruit during these three months was about 70 per cent larger in 1933 than in 1932 and about 11 per cent larger than in 1931.

In the past four years canneries have used an average of about 2,000,000 boxes of grapefruit a year or about 14 per cent of the United States annual production. While canning has provided a market for some of the surplus, the canned product competes with the fresh fruit, particularly during the summer months. The 1932-33 pack is now estimated at 2,600,000 cases. Prior to 1929-30 the pack had never exceeded 1,000,000 cases.

Citrus marketing agreements under the Agricultural Adjustment Administration for California-Arizona, Florida, and Texas have been tentatively approved by the Secretary of Agriculture and sent to shippers for signature. These marketing agreements are designed to enable the marketing organizations to regulate more effectively the shipments of oranges and grapefruit in accordance with the demands of consumers.

LEMONS

An expansion in both bearing acreage and production of lemons in California, the only state in the Union to produce this crop on a commercial basis, is in prospect during the coming years. Plantings of lemons in the past four years have been heavy. As these trees come into bearing, an upward trend in production will occur. This prospective increase in production is likely to accentuate the surplus condition which has characterized the lemon industry in most years since 1924. Lemon growers, however, still have the opportunity of preventing a disastrous surplus condition from developing in the lemon industry by the immediate cessation of plantings; but if the heavy plantings of the past four years are continued, the opportunity will be lost.

The total lemon acreage in California in 1933, exclusive of 1933 plantings, amounted to 46,496 acres, of which 41,134 acres or 88 per cent was in bearing and 5,362 acres, or 12 per cent nonbearing. The present nonbearing acreage is about twice as large as that needed for normal replacements. According to the available information, the average life of a lemon tree is around thirty-five years. The period of heavy plantings of lemons in California was during the decade 1910-1920. Judging from the data on numbers of trees given in the census reports, it appears that about 80 per cent of the bearing acreage in 1933 was planted between 1910 and 1920, and about 8 per cent was planted since 1920. Thus, about 88 per cent of the bearing acreage in 1933 was twenty-three years of age or younger. If it is assumed that the remaining 12 per cent of the bearing acreage was from twenty-four to thirty-five years of age and that one-tenth of this acreage would be removed each year, then removals would amount to about 500 acres a year. Exclusive of 1933 plantings, all of the present nonbearing acreage amounting to 5,362 acres will be in bearing five years hence; yet the present prospects are that not over 2,500 acres will have been removed during that period.

Since 1926-27 there has been only a small rise in the trend of lemon production, a distinct contrast to the rapid increase of the previous ten years. From 1916-17 to 1926-27 the trend of production rose at the rate of 400,000 boxes a year, but in the past six years the rise has averaged only 100,000 boxes a year. For the next two or three years the trend is likely to remain at about its present position, but thereafter it promises to turn upward as the relatively large plantings of the past four years come into bearing.

The rapid increase in production prior to 1926-27 and the heavy production since then would have resulted in materially lower prices to growers than those obtained had it not been for decreased imports, limitation of domestic shipments, and increased demand.

The trend of importations of lemons into the United States has been downward since 1912-13. For the five years 1912-13 to 1916-17, imports averaged 1,925,000 boxes; from 1922-23 to 1926-27, 1,152,000 boxes; and from 1927-28 to 1931-32, 620,000 boxes. In 1931-32 imports amounted to only 99,000 boxes, while in 1932-33 they amounted to only 145,000 boxes. This pronounced decrease in imports is one of the important reasons why it has been possible to market an increasing volume of California lemons at relatively favorable prices. California shipments of lemons increased from an average of 4,677,000 boxes in the five years 1922-23 to 1926-27 to an average of 5,334,000 boxes in the five years 1927-28 to 1931-32. The net increase in the volume of lemons marketed

in the United States during the past decade was almost exactly proportional to the increase in population in this country. There has been no definite upward or downward trend in the per-capita consumption of lemons since 1920. For the past twelve years, per-capita consumption has fluctuated around 3.6 pounds.

Since importations of lemons are now very small, it is obvious that there can be no further material displacement of foreign-grown by domestic-grown lemons in the markets of this country. Unless there is an increase in the total United States consumption of lemons, therefore, a further increase in the consumption of California lemons in this country cannot occur. The growth of population in the United States by itself is not likely to provide an outlet for any substantial increase in production. There is definite evidence that the rate of increase in population is slowing down. Between 1920 and 1930 the average increase amounted to 1,665,000 people a year. From 1930 to 1940 it is estimated that the average increase will amount to only 925,000 people a year. At 3.6 pounds per capita, the growth in population during the past decade provided an additional market for 81,000 boxes of lemons a year; during the current decade the increase in lemon consumption as the result of population growth is likely to be about 45,000 boxes a year.

Exports of lemons from the United States have never amounted to any considerable proportion of the total shipments. During the past five years, an average of only 241,000 boxes a year has been exported, mainly to Canada, with small quantities to China, Japan, Philippine Islands, and New Zealand. The domestic market for California lemons is protected by an import duty of 2.5 cents a pound; whereas in foreign markets, California lemons come in direct competition with those produced elsewhere. Production of lemons in Italy, the largest lemon-producing country in the world, has remained at a relatively high level for the past seven years and there is no evidence now available pointing toward any material decrease in production during the coming years. On the average, over one-half of the lemons produced in Italy are exported. The sharp curtailment in the United States market for Italian lemons has been accompanied by an expansion in Italian exports to other countries. At the present time there appears little probability that foreign markets will afford an outlet for a larger quantity of California lemons than has been exported in recent years. On the other hand, there is considerable possibility that importations of lemons into this country during the coming years will average above the small quantities imported in 1931-32 and 1932-33.

Although the United States per-capita consumption of lemons remained virtually stationary during the past decade, there was nevertheless some increase in the demand for lemons which was reflected in higher prices. During the three years 1927-28 to 1929-30, the f.o.b. price received for California lemons averaged \$4.87 a box as against \$3.82 a box during the three years 1921-22 to 1923-24. Although prices of lemons since 1929-30 have been lower than the average of the previous three years, they have been relatively favorable as compared with the prices of most California crops. The depressing effect of the decline in the general price level and the decrease in the buying power of consumers was offset in part by the decrease in the United States supply of lemons and by the increased demand for lemons caused by the hot summers in eastern markets. In 1931-32 and 1932-33 the United States supply of lemons averaged 5,228,000 boxes a year, about 14 per cent below the average of 1929-30 and 1930-31. In each of the past four summers warm weather, which stimulated the demand for lemons, prevailed in the principal markets of the country. In fourteen important cities temperatures from June through September averaged 2.6 degrees above normal for the four years 1930-1933, as against 0.7 degrees below normal for the previous four years.

ORANGES

Nearly every country in the world that is adapted to the production of oranges has greatly increased its acreage of this fruit during the past decade. Heavier shipments from foreign countries, together with import duties in our principal export markets, are restricting the sale of United States oranges abroad. Supplies of oranges available for the domestic markets, which have been excessive under the low buying power of consumers in the past three years, will be further increased during the next few years. Competition from grapefruit is steadily becoming greater.

Citrus marketing agreements under the Agricultural Adjustment Administration for California-Arizona, Florida, and Texas have been tentatively approved by the Secretary of Agriculture and sent to shippers for signature. These marketing agreements are designed to enable the marketing organizations to regulate more effectively the shipments of oranges and grapefruit in accordance with the demands of consumers.

Winter Oranges.—The trend of winter-orange production in the United States is upward, although at a slower rate than that which prevailed in the past decade. Continued heavy production in California and a further increase in production in Florida, Arizona, and Texas are in prospect during the next few years.

From 1920-21 to 1930-31 there was a marked increase in the trend of winter-orange shipments from California, rising at an average rate of 520,000 boxes a year. Average shipments during the five years 1927-28 to 1931-32 amounted to 13,876,000 boxes as against an average of 10,242,000 during the five years 1920-21 to 1924-25, an increase of 35 per cent. Since 1930-31 no further upward trend in shipments has occurred. The peak of production of Navel oranges, which constitute the bulk of our shipments during the six months, November to April inclusive, has been reached. Most of the Navel-orange acreage in California is now in full bearing. The present nonbearing acreage, amounting to only 4,700 acres, or 5 per cent of the total acreage, is not in excess of that required for normal replacements. Shipments of California Valencia oranges in November, which have become of some importance in the past few years, are likely to increase still further.

The trend of winter-orange shipments from Florida rose from 6,400,000 boxes in 1920-21 to 11,800,000 boxes in 1930-31, an average increase of 540,000 boxes a year. The proportion of nonbearing and young-bearing trees in Florida is apparently sufficient to permit the trend of shipments to continue upward for the next two or three years, but at a slower rate. Thereafter, shipments are likely to remain about stationary for some years. During the past three years plantings of oranges in Florida were less than half those of the previous three years. The estimated acreage of oranges, tangerines, and Satsumas in Florida is now around 260,000 acres, of which 221,000 acres or 85 per cent are in bearing and 39,000 acres or 15 per cent are nonbearing. The nonbearing acreage is probably not much larger than that required for normal replacements. Consequently, no further immediate expansion in bearing acreage in Florida is expected. Production in that state, however, may continue upward for another two or three years, since a considerable proportion of the present bearing acreage has not yet reached the age of full bearing.

The combined acreage of oranges in Texas and Arizona now amounts to 27,200 acres, of which 19,000 acres or 70 per cent are in bearing and 8,200 acres or 30 per cent are nonbearing. Shipments of winter oranges from Texas during the past four years averaged 60,000 boxes a year as against 5,000 boxes a year during the previous four years, while shipments from Arizona during the past four years averaged 39,000 boxes a year as against 30,000 boxes a year during the previous four years.

Exports of winter oranges from the United States during the six months, November to April, in 1932-33 amounted to 1,224,000 boxes or 5 per cent of the total United States shipments. In 1931-32 exports of winter oranges amounted to 1,376,000 boxes, while the average exports

for the five seasons 1927-28 to 1931-32 amounted to 1,703,000 boxes. Canada has long been our most important export market for oranges, taking during the five years 1927-28 to 1931-32 an average of 86 per cent of our total exports. In 1932-33, however, only 81 per cent of our exports went to Canada. In June, 1931, Canada placed an import duty of 75 cents a box on oranges from this country which has tended to restrict importation of our oranges. United States exports of oranges to Canada in the winter of 1932-33 amounted to only 995,000 boxes as against 1,254,000 boxes in 1931-32 and an average of 1,469,000 boxes during the five years 1927-28 to 1931-32. In European markets United States oranges meet keen competition from low-priced oranges produced in Spain, Italy, and Palestine. In Palestine the trend of orange production is sharply upward, while in Spain a moderate increase is in prospect.

The pronounced decrease in the buying power of consumers during the past three years has resulted in a sharp decrease in prices to California growers despite a substantial reduction in the United States shipments of winter oranges. In 1932-33 the average f.o.b. price received for packed fruit shipped during the six months, November to April, was about \$1.56 a box as against \$1.92 a box in 1931-32 and \$2.28 a box in 1930-31. Total United States shipments of oranges in 1932-33 amounted to 24,283,000 boxes as against 27,052,000 boxes in 1931-32 and 29,513,000 boxes in 1930-31. The 1933-34 Florida crop of oranges was reduced by storms in September and is now estimated to be about 7 per cent less than that of 1932-33.

Summer Oranges.—The trend of United States production of oranges which are marketed during the six months, May to October, is sharply upward. California normally contributes about 92 per cent of the United States supply of summer oranges, and in this state a substantial increase in both bearing acreage and production is in prospect.

California shipments of summer oranges, which are mainly Valencias, have been increasing at a rapid rate. In 1921 the trend of shipments was at 7,000,000 boxes, in 1933 at 15,400,000 boxes; this is an average annual increase of 700,000 boxes a year. Actual shipments in 1933 about coincided with the trend; but in 1931 and 1932 they were considerably above the trend, amounting to 16,426,000 boxes and 16,011,000 boxes respectively. The available data on acreage indicate that the future rise in the trend of shipments will be at least as rapid as in the past unless limited by industry agreement.

In 1933 the total acreage of Valencias in California, exclusive of 1933 plantings, amounted to 134,100 acres of which 21,100 acres or 16 per cent

were nonbearing. Approximately 23,000 acres of the 113,000 acres in bearing in 1933 have been in bearing only since 1928 and have not yet reached full-bearing age.

In 1933 the average f.o.b. price for packed fruit shipped during the six months, May to October, was about \$1.88 a box as against \$1.93 in 1932 and \$2.39 in 1931. Although shipments of summer oranges from California were smaller in 1933 than in 1932, those from Florida—because of the late season in that state—were much heavier. The total United States supply of summer oranges in 1933 was approximately 7 per cent larger than in 1932. During each of the three months, May to July, f.o.b. prices of California oranges were lower in 1933 than in 1932, but during the three months, August to October, they were higher. This increase during the latter months of the 1933 season over the corresponding months of 1932 is accounted for mainly by the increase in the buying power of consumers and by the voluntary industry-shipment-regulation program which was in effect. Total United States shipments of oranges during the three months, August to October, were about 1 per cent larger in 1933 than in 1932.

During the past decade export markets afforded an outlet for an increasing proportion of the United States shipments of summer oranges. For the three years 1922–1924 around 10 per cent of our shipments during the six months, May to October, were exported; while for the three years 1929–1931 about 15 per cent were exported. In the past two years, however, the proportion of the shipments exported declined. In both 1932 and 1933 only 11 per cent of the shipments were exported. This relative decline in exports as compared with domestic shipments is partly accounted for by the import duties which have gone into effect in our principal foreign markets, Canada and the United Kingdom. Until 1931 there were no restrictions on orange imports into Canada but in June of that year Canada placed a tariff of 75 cents per box on oranges from this country. In November, 1932, the United Kingdom imposed a duty of 3 shillings 6 pence per 112 pounds on oranges from the United States. Since oranges imported into both Canada and the United Kingdom from countries of the British Empire were left on the free list, these countries now have a decided competitive advantage. Oranges from South Africa and Australia are marketed during our summer orange season, while those from Jamaica are marketed during the latter part of our summer season and the first part of our winter season.

Production of oranges in the countries of the Southern Hemisphere, whose crops are marketed during the summer months, is increasing rapidly. Exports from South Africa increased from 455,000 boxes in

1924 to 1,750,000 boxes in 1932, while those from Brazil increased from 315,000 boxes in 1924 to 1,650,000 boxes in 1932. Production of oranges in Australia has increased from 1,693,000 boxes in 1924 to 2,445,000 boxes in 1931. The available information on acreage points to further increases in each of these three countries during the next few years.

ALMONDS

For some years to come almond production in California, the only state in the Union to produce this crop commercially, is likely to fluctuate around the present level. The increase in production on the present non-bearing and young-bearing acreage will be about offset by the decline in production on the present full-bearing acreage.

The total acreage of almonds in California in 1933 amounted to 74,900 acres, of which 96 per cent was in bearing and 4 per cent non-bearing. Most of the bearing acreage is now in full bearing. The non-bearing acreage in 1933, amounting to 2,650 acres, was only 32 per cent as large as that of 1928 and only 21 per cent as large as that of 1927.

The 1933 production of almonds in California is now estimated at 12,900 tons as against 14,000 tons in 1932, 14,800 tons in 1931, and 13,500 tons in 1930. Yields per acre in 1933 were slightly below average. The condition of the crop was 63 per cent of normal as against the twelve-year 1921-1932 average of 68 per cent.

Prior to 1928 there was a marked upward trend in almond production in this state. Between 1919 and 1928 the average increase in the trend of production amounted to 900 tons a year. Since 1928 the trend of production has leveled off, and for the past five years has remained at 13,500 tons. During the next few years no significant upward or downward change in the trend of production is in prospect. In any year when weather conditions are favorable to high yields, production will of course be considerably above the trend; but in years of unfavorable weather conditions, production will be below the trend.

During the past three years California almonds have experienced considerably less competition from imported almonds than was formerly the case. Although there was a gradual downward trend in almonds imported into the United States between 1921-22 and 1929-30, the volume at the end of that period was still large in relation to California production. Average imports during the two years 1927-28 and 1928-29 amounted to 600 tons of unshelled almonds and 8,897 tons of shelled almonds, or a total of 27,290 tons in equivalent unshelled. The average production of almonds in California in 1927 and 1928 amounted to 13,000

tons, making a total United States supply of almonds in equivalent unshelled of 40,290 tons, of which California contributed 32 per cent. During the past three years imports of unshelled almonds have been negligible, averaging only 35 tons a year, while imports of shelled almonds have on the average been only 47 per cent as large as the average of 1927-28 and 1928-29. Total imports in equivalent unshelled during the past three years have averaged 12,555 tons a year; California production has averaged 14,100 tons a year. Thus, during this three-year period California contributed 53 per cent of the United States supply of almonds.

In 1932-33 imports of shelled almonds were the smallest on record, amounting to only 2,317 tons, as against 3,965 tons in 1931-32, 6,238 tons in 1930-31, and an average of 10,174 tons during the nine years 1921-22 to 1929-30. In June, 1930, the United States import duties were increased from 14.00 cents a pound to 16.50 cents a pound on shelled almonds and from 4.75 cents a pound to 5.50 cents a pound on unshelled almonds. With the pronounced fall in wholesale prices of almonds during the past three years, these import duties have constituted a relatively large percentage of the selling prices in this country and have, therefore, been more effective in restricting competition from foreign supplies than formerly. Since March, 1933, there has been a substantial decline in the value of United States dollars in terms of French, Italian, and Spanish currencies. This has tended to restrict imports from those countries, which are the principal sources of foreign supplies.

Almond production in the Mediterranean Basin, while fluctuating widely from year to year, has exhibited no definite upward or downward trend during the past five years. Supplies available for exports to the United States apparently will continue for some years to be as large as they were between 1926-27 and 1928-29 when United States imports averaged 8,620 tons of shelled almonds and 480 tons of unshelled almonds. Actual imports during the coming years will depend not only upon the production in the Mediterranean Basin, but also upon the level of wholesale prices of almonds in this country, the amount of the import duty, and the exchange rate between the United States dollar and foreign currencies.

It is of considerable significance that during the relatively prosperous years of 1922-1929 there was no increase in the demand for almonds in this country. Although the trend of almond prices during that period was upward, the trend of consumption was downward. In 1921-22 and 1922-23 the total United States supply of almonds in equivalent unshelled averaged 46,304 tons as against an average of 40,290 tons in 1927-28 and 1928-29, a decrease of 13 per cent. This reduction in total

supply was mainly responsible for the increase in prices to California growers from an average of 14.4 cents a pound during the two years 1921 and 1922 to an average of 16.6 cents a pound during the two years 1927 and 1928, an increase of 15 per cent.

The demand for almonds in this country during the past three years has been materially below that which prevailed prior to 1929. In 1932-33 the apparent consumption of almonds in equivalent unshelled amounted to around 21,023 tons, 48 per cent below the 1927-28 to 1928-29 average, while the price paid growers in 1932 of 8.2 cents a pound was 51 per cent below the average price to growers in 1927 and 1928. Current reports indicate that prices paid growers for the 1933 crop will average about 1.0 cent a pound higher than for the 1932 crop.

Competition which almonds experience from domestic grown walnuts and pecans is becoming increasingly severe. The trends of production of both walnuts and pecans are sharply upward. Less than one-half of the acreage devoted to each of these crops is now in full bearing.

WALNUTS

The trend of walnut production in both California and Oregon is sharply upward. Unless there is a substantial removal of trees or widespread neglect of orchards, the present planted acreage when it reaches full bearing about twelve years hence, will normally produce crops about twice as large as that of 1933.

The total acreage of walnuts now planted in California is estimated by the California Coöperative Crop Reporting Service to be 135,200 acres. Of this amount about 110,700 acres or 82 per cent are in bearing and 24,500 acres or 18 per cent nonbearing. According to the records of the California Walnut Growers Association approximately 57 per cent of the present bearing acreage is less than sixteen years of age and, therefore, is not yet in full bearing. Thus, the available data indicate that about 35 per cent of the total walnut acreage in California is full bearing, 47 per cent young bearing, and 18 per cent nonbearing. Since the walnut tree is long-lived, it is unlikely that removals as the result of old age will be an important factor in quickly retarding the prospective upward trend in production.

In 1931-32, about 1,700 acres of walnuts in southern California were removed, but only 1,100 acres in 1932-33. The pronounced drop in the prices of oranges has materially reduced the incentive to uproot walnut trees for the purpose of planting orange trees. Most of the removals of walnut trees have been seedlings, while nearly all of the plantings during

recent years have been improved varieties, the yield per acre of which is substantially higher than that of seedlings. While there is wide variation in the potential productive capacity of the orchards planted during recent years because of differences in soil and climate, it is believed that the nonbearing and young-bearing acreage is on the average about as favorably located with respect to soil and climate as the full-bearing acreage. Consequently, it is probable, in view of the larger proportion of higher-yielding varieties on the newer acreage, that the average yield per full-bearing acre will tend to increase.

From 1921 to 1925 the trend of walnut production in California increased at the rate of 1,000 tons a year. Since 1925 the increase in the trend of production has been at the rate of 1,800 tons a year. For the next ten years the trend of production is likely to continue to increase at about the same rate as has prevailed since 1925.

The 1933 production of walnuts in California is now estimated at 32,000 tons. This crop, while about equal to the five-year 1928-1932 average production of 33,700 tons, is about 9,000 tons below that which would have been produced had yields per acre in 1933 been average. The reported condition of the 1933 crop was only 66 per cent of normal as against the twelve-year 1921-1932 average condition of 76 per cent of normal.

Walnut production in Oregon, although still small, is increasing rapidly. In 1925 the trend of production was at 500 tons and in 1933 at 2,300 tons, an average increase of over 200 tons a year. Since about 50 per cent of the walnut acreage in Oregon is now in bearing, while only about 25 per cent is in full bearing, a further substantial increase in the trend of production is in prospect during the coming years.

From 1922-23 to 1929-30, the per-capita consumption of unshelled walnuts in the United States averaged 0.61 pounds. During this period there was no definite upward or downward trend in per-capita consumption. In the past three years, however, per-capita consumption has been low, amounting to only 0.44 pounds in 1930-31, 0.38 pounds in 1931-32, and 0.44 pounds in 1932-33.

The increase in the consumption of California unshelled walnuts during the past ten years has been fully offset by the decrease in the consumption of imported walnuts. Imports of unshelled walnuts during the three years 1922-23 to 1924-25 averaged 11,468 tons a year as against an average of only 2,192 tons during the past three years. Since importations of unshelled walnuts are now small, a further substantial increase in the consumption of domestic-grown walnuts must come as the

result of increased per-capita consumption of unshelled walnuts rather than by the substitution of domestic-grown for foreign-grown walnuts.

During the coming years the growth in population in the United States itself is not likely to result in any large increase in the demand for walnuts. There is definite evidence of a material decline in the rate of population growth in this country. Prospects are that the population in 1940 will be only from 7.5 per cent to 10.0 per cent larger than in 1930, with the smaller percentage increase the more probable.

The main source of income from walnut production in California has always been from the sale of unshelled walnuts in this country. While the shelling of a portion of the merchantable crop and the exporting of unshelled walnuts may be very helpful in adjusting the domestic supply of unshelled walnuts to the market demands in this country, they cannot be expected to maintain returns from walnut production at a level profitable to the average grower. The competition from foreign unshelled walnuts in this country is minimized by the existence of an import duty amounting to 5 cents a pound. Any exports of California walnuts to European countries, however, come into direct competition with low-priced foreign-grown walnuts.

From 1922-23 to 1930-31, when the California output of edible kernels averaged only 1,400 tons, the average price returned to local associations for the shelled walnuts was 7.8 cents a pound. In 1931-32 the price fell to 4.6 cents a pound, and in 1932-33 to 4.4 cents a pound. The large buyers of bulk shelled walnuts prefer medium-sized light kernels. A relatively high percentage of the California kernels is large in size and amber to brown in color. Consequently, California shelled walnuts are at a disadvantage in the bulk markets as compared with the better grades of imported shelled walnuts which are medium in size and light in color. Competition from foreign shelled walnuts in our domestic markets is likely to remain keen for many years even though the United States import duty on shelled walnuts is now relatively high as compared with former periods, having been raised from 12 cents a pound to 15 cents a pound in June, 1930. Most of the United States imports of shelled walnuts come from France, Italy, and China. There is no evidence pointing towards any material decrease in production in these countries.

The large prospective increase in improved pecans, most of which are marketed in the shell, may add considerably to the competition that California unshelled walnuts meet in the consuming markets. In 1930, about 65 per cent of the pecan trees of improved varieties were under eleven years of age while less than 40 per cent were under six years of age.

In October, 1933, walnut packers on the Pacific Coast and the Secretary of the United States Department of Agriculture entered into a marketing agreement designed to regulate the volume of domestic-grown unshelled walnuts to the demands of the markets in this country, and to prevent the surplus production from unduly depressing the prices received for merchantable unshelled walnuts in the United States by exporting such surplus walnuts to foreign countries or by diverting them to shelling plants or other by-product outlets.

OLIVES

A gradual downward trend in olive production in California is in prospect during the next five or six years. Average production during this period, however, is likely to be much above the small crop of 1933, a year of unusually low yields per acre. Since 1928 a substantial decrease in bearing acreage has occurred, and the present nonbearing acreage is much less than will ordinarily be needed for normal replacements.

The total acreage of olives in the state in 1933 amounted to 24,400 acres as against 33,800 acres in 1928, a decrease of 28 per cent. Approximately 99 per cent of the total acreage in 1933 was in bearing. The small nonbearing acreage in 1933, amounting to only 300 acres or 1 per cent, is not nearly sufficient for normal replacements even though orchards receive much better care than they have in the past two or three years. An olive tree in California ordinarily comes into commercial bearing around six years of age and reaches full bearing around thirteen years of age. According to the available information the commercial bearing life of an orchard in this state is about thirty-five years. As nearly as can be judged from the data given in the census reports, approximately 65 per cent of the present acreage has been planted since 1914, and, therefore, is less than twenty years of age. About 15 per cent of the present acreage was planted between 1900 and 1914, while apparently 20 per cent was planted prior to 1900. This latter group is now thirty-four years of age and older and will normally be out of bearing six or seven years hence.

During the past decade there was a pronounced upward trend in olive production in California, rising from an average of 11,733 tons in 1921-1923 to an average of 20,500 tons in 1928-1930. In the past few years, however, there has been no further increase. Although the 1932 crop, amounting to 22,000 tons, was the largest on record, both the 1931 and 1933 crops were small, amounting to only 16,000 tons and 12,600

tons, respectively. In those two years yields per acre were reduced by unfavorable weather conditions, and for the past three years there has been considerable neglect of orchards.

The available evidence points towards a gradual downward trend in production during the next five or six years. The decline in yields on the older orchards, together with the removal of trees due to old age, will likely more than offset the increase in yields on the young orchards. Unless there is continued neglect of orchards, however, the prospective downward trend in production is not likely to be rapid. Average production for the next five years is likely to be nearly 50 per cent higher than the estimated production in 1933.

Virtually all of the prospective decrease in production is likely to be in Missions and Manzanillos. There is practically no nonbearing and young-bearing acreage of these varieties while some of the trees are past the age of maximum yields and are declining in productivity. On the other hand, production of Sevillanos and Ascolanos is expected to remain at the present level for some years. Although the nonbearing acreage of these large varieties is small, a considerable proportion of the trees has not yet reached full bearing.

On the average about 58 per cent of the commercial production of olives in California is canned, 36 per cent pressed for oil, and 6 per cent shipped fresh and dried. California produces only a very small part of the edible olive oil used in this country, about 98 per cent of the amount consumed in the United States being imported, mainly from Italy, Spain, and France. During the past decade there has been a substantial increase in the world production of olive oil. Prices of edible olive oil, although much above prices of other oils, such as cottonseed, coconut, and corn, have at no time in the past decade been sufficiently high to return to California producers of oil olives a satisfactory price. During the nine years 1921-22 to 1929-30, the average price paid growers for oil olives was \$34.00 a ton. In 1932-33, however, they received only \$17.50 a ton.

A pronounced decline in the buying power of consumers since 1929 has affected the demand for canned ripe olives more than the demand for many of our fruits because ripe olives are essentially a luxury product. As compared with the three years 1926-27 to 1928-29, shipments of canned ripe olives in 1932-33 were 18 per cent smaller, while the average selling price of Large Missions was 45 per cent lower and Colossal Sevillanos 38 per cent lower.

Shipments in 1932-33 amounted to 522,000 cases as against 517,000 cases in 1931-32. Selling prices of canned ripe olives in 1932-33, how-

ever, were materially lower than in 1931-32. The average price received for Large Missions in cylinder pints was \$0.97 a dozen in 1932-33 as compared with \$1.29 in 1932-33, whereas the average price received for Colossal Sevillanos in cylinder pints was \$2.40 a dozen in 1932-33 as against \$2.76 a dozen in 1931-32.

The carryover of canned ripe olives into the 1933-34 season is the smallest in many years, amounting to only 52,000 cases as compared with a carryover of 189,000 cases into the 1932-33 season and a record carryover of 313,000 cases into the 1930-31 season.

Prior to 1928-29 there was a substantial increase in the trend for canned ripe olives in this country. Shipments increased from an average of 304,000 cases in 1920-21 to 1922-23 to an average of 638,000 cases in 1926-27 to 1928-29, which is an average increase of 55,000 cases a year. Since this upward trend of shipments did not result in a downward trend in prices of canned ripe olives, it is evident that the demand for canned ripe olives during this period increased at about the same rate as shipments increased.

Under the Marketing Agreement for the California Ripe Olive Canning Industry, it is proposed that the 1933-34 pack of canned ripe olives be limited to the amount that can be sold at prices which will return growers an average of about \$70 a ton orchard run for Missions and Manzanillos delivered to canners and an average of about \$140 a ton for Sevillanos delivered to canners.

BEEF CATTLE

The current cycle in cattle production has been in its upward phase since 1928. Cattle numbers at the beginning of 1933 were about 15 per cent larger than those of five years earlier. Judging from the normal length of previous cycles and other factors now at work, numbers are likely to increase for two more years. The increase in numbers, however, has only recently been reflected in increased cattle slaughter. During the next few years further substantial increases in slaughter supplies are in prospect.

The total number of cattle and calves on farms about October 1 this year was probably about 2,500,000 head larger than at the corresponding date a year earlier. The number of cows and heifers in this country at the beginning of 1933 was probably the largest on record. Because of the increase in the number of cows, the number of calves born this year will probably exceed the number born in 1932 by about 1,000,000 head.

Inspected slaughter of cattle during the first 10 months of 1933, totaling 7,158,000 head, was over 11 per cent larger than in the corresponding period of 1932 and 5 per cent larger than the average of the five years 1928-1932. Calf slaughter also increased, the total for 10 months being almost 8 per cent larger than a year earlier. The larger slaughter of cattle and calves this year represents, undoubtedly, the upswing in cattle slaughter which would be expected to result from the increase in cattle numbers which began in 1928. This upswing was delayed for two years as a result of the declining cattle prices accompanying the depression. With present numbers of cows, the annual output of cattle and calves is equal to the largest yearly slaughter of such stock on record. In order to move the total beef and veal production from such a slaughter into consumption, a substantial further increase in consumer buying power is necessary to avoid a reduction in prices of these meats. The retention of cattle on farms and ranges might improve the situation temporarily but would result in a further accumulation of supplies that must be disposed of eventually.

Imports of live cattle and imports of canned and other beef during the first 9 months of 1933 were the equivalent of slightly more than 2 per cent of the cattle slaughter under federal inspection during this period. Live cattle and fresh and frozen-beef imports declined materially during the first 9 months of 1933 when compared with the same period last year. Supplies of canned beef inspected by the Bureau of Animal Industry for entry into the United States from January 1 to September 30, 1933, were about 83 per cent larger than those received in the corresponding period of 1932 and more than double those received during the first 9 months of 1931.

Cattle prices trended sharply downward from early 1930 through 1932 despite the relatively small slaughter supplies during that period. Although prices did not decline much during the first 10 months of 1933, they were below those of a year earlier and were at the lowest levels in more than twenty-five years. Undoubtedly, the 200 per cent increase in the prices of steer and calf hides between February and August, 1933, prevented cattle prices from going to even lower levels. The average price of medium steers at Los Angeles from January through October was \$5.12 per 100 pounds as compared with \$5.73 for the corresponding months in 1932 and \$6.95 for that period in 1931. The average price received by California producers for veal calves during the first 10 months of 1933 was \$5.03 per 100 pounds as compared with \$5.77 in 1932 and \$7.86 in 1931.

Consumer demand for beef in California is undergoing a marked change. Although consumption has held up better than in the nation, the demand is for lighter beef. There has been an increase in the demand for cattle with grain finish. Many California producers have endeavored to meet the changed conditions by finishing cattle on concentrates. Other cattlemen are attempting to shift their operations to get their cattle to market at a younger age.

DAIRY

The present dairy situation is characterized by record stocks of dairy products, a lowered rate of consumption, a high rate of production, record numbers of cows being milked, and low prices of meat-producing livestock that tend to make it relatively more profitable to use feed for dairy production than for meat production. Under these conditions such apparent strength of dairy products' prices as existed until December 15 was due to the price-supporting measures being applied.

Except for seasonal fluctuations, the number of milk cows on farms has increased continuously since 1928. On June 1, 1933, the number of milk cows on farms was about 2.3 per cent above the number a year earlier and about 14 per cent above the number in June, 1928. Since last spring there has been a sharp increase in the number of cows marketed, due apparently to the accumulating surplus supply of cattle, to the shortage and rapidly increasing cost of feed, poor pastures, and the tendency of the prices of dairy products to rise less rapidly than the prices of many other farm products. The number of cows and heifers slaughtered under federal inspection during May, June, July, and August totaled 1,342,000 as compared with 1,010,000 in those months last year, and an average of 1,112,000 in those months during the preceding three years. These figures, by themselves, would seem to indicate a decided slowing-up in the rate at which dairy herds are increasing, but the situation is now complicated by the indications that farmers in the western Corn Belt are milking some cows that were formerly kept only for beef production. Several million beef cows are on farms in the Corn Belt and elsewhere. Some of these cows have been milked in past years and about 20 per cent are with their first calf. There are, therefore, enough beef cows available to permit the total number of cows milked to be increased several per cent in a year if prices of dairy products are high enough to make the change worth while. However, excluding this beef stock, it is still obvious that the number of milk cows is abnormally high and can hardly be quickly reduced without greatly increasing the

number of cows marketed and further depressing the price for that class of cattle. For this reason the potential producing capacity of the dairy herds will remain high for another year and probably for at least two years unless measures are taken to help farmers dispose of the surplus cows.

Converted to a milk-equivalent basis, the production of the most important manufactured dairy products during the first 9 months of 1933 is estimated to have been about 4 per cent larger than during the same months in 1932. The production of creamery butter was approximately 3 per cent greater, cheese 7 per cent, and evaporated milk 14 per cent, but condensed milk was 17 per cent less. Information from trade sources indicates that the commercial production of ice cream which has been on the decline since 1929 continued this trend the early part of 1933. The decrease in the production of ice cream and condensed milk, however, was not sufficient to offset the liberal increase in the production of butter, cheese, and evaporated milk.

The large number of milk cows on farms, the tendencies towards milking more beef cows and towards earlier weaning, and the ample supply of labor, all favor a heavy increase in the output of dairy products if prices are materially increased with no control of production. On the other hand, in adjustment to recent prices, farmers were feeding much less grain per cow on October 1 than would ordinarily be fed at that season with pastures as poor as they were. If this light feeding continues after the close of the pasture season, it will mean a decrease in the production per cow as compared with the same months in previous years.

The storage situation with respect to dairy products has become of increasing importance during 1933. The new storing season opened with stocks of butter and cheese less than average, but there was a heavy early movement into storage; and by July 1, stocks of butter amounting to 106,378,000 pounds represented not only an excess over a year earlier, amounting to 22,000,000 pounds, but also a surplus over the July 1 five-year average of approximately 18,000,000 pounds. American cheese stocks on the same date totaling 67,456,000 pounds were 13,500,000 pounds heavier than on July 1, 1932, and 4,500,000 pounds above the July 1 five-year average. Heavy into-storage movements occurred during July and August with the result that on September 1 there were larger quantities of butter and American cheese in cold storage than ever before recorded, butter stocks amounting to 175,476,000 pounds and American cheese 94,394,000 pounds. Butter stocks on October 1 were 174,857,000 pounds as compared with 89,490,000 pounds a year earlier, and an October 1 five-year average of 117,549,000 pounds.

American cheese continued to increase during September and a new all-time high record was reached on October 1 when stocks totaled 99,369,000 pounds, as compared with 68,555,000 pounds on October 1, 1932, and a five-year average of 80,838,000 pounds. These October 1, 1933, figures include government-owned stocks of butter and cheese purchased for relief purposes. Up to September 1, evaporated-milk stocks held by manufacturers were still less than in 1932; but beginning in July and since then, the trade output of this product declined materially, causing increasing quantities to back up in manufacturers' hands, and on October 1, stocks of 208,000,000 pounds were 18 per cent heavier than a year earlier. In terms of milk equivalent, stocks of butter, cheese, condensed and evaporated milk on October 1 were 61 per cent heavier than on October 1, 1932.

During the first 9 months of 1933 the apparent consumption of creamery butter was 3.8 per cent less than during the corresponding period of 1932; cheese decreased 3.7 per cent; and condensed milk decreased 13.2 per cent. The net decrease of all the above products combined on a milk-equivalent basis was 2.7 per cent, while production increased 4.2 per cent during this period.

After three years of declining prices, farm prices of dairy products reached a low in March, 1933, of 59 per cent of the 1910-1914 average. At that time the farm price of milkfat was 15.1 cents a pound. With the suspension of gold payments in April and the rise in the general price level and the improvement in business, prices of dairy products increased. From March to September, the farm price of milkfat increased 29 per cent. During the period of deflation, prices of dairy products did not decline as rapidly as the prices of many other farm products. During the three years, 1930 to 1932, prices of milkfat were relatively high as compared with feed grains. In 1933, however, prices of grains increased more rapidly than prices of milkfat. In the period, July to September, 1933, a pound of milkfat was equivalent to the price of 22 pounds of feed grains at farm prices, as compared with 33 pounds during the same period of 1932, 30 pounds for the five years 1925-1929, and 22 pounds in the period, 1910-1914. This change in the relation between milkfat and grain prices in the last 6 months has been one of the most important developments in the dairy-price situation.

HOGS

Commercial slaughter of hogs in the United States during the 1933-34 marketing year (October 1, 1933 to September 30, 1934) will be considerably smaller than that of the preceding marketing year, as the result of the slaughter of some 6,000,000 pigs in August and September under the federal emergency hog-production-control plan and the short production of corn and other feed crops. The expected decrease in hog slaughter will occur largely during the winter marketing period (October 1, 1933 to May 1, 1934).

The 1933 spring pig crop for the United States was estimated at 51,030,000 head, an increase of 3 per cent over the 1932 spring pig crop. All of this increase occurred in the Corn Belt states where about 90 per cent of the commercial supply of hogs is produced. In the western states there was a decrease of 11 per cent. Present indications are that there will be little, if any, increase over 1932 in the 1933 fall farrowings with a decrease not improbable.

In August, 1933, the United States Department of Agriculture, under the terms of the Agricultural Adjustment Act, put into effect the emergency program designed to reduce market supplies of hogs during the 1933-34 marketing year. Under this program about 6,141,000 pigs, weighing less than 100 pounds, and about 221,000 sows, weighing in excess of 240 pounds and bred to farrow this fall, were purchased for slaughter on government account. This purchase, together with some reduction in average weights of hogs due to the short corn crop, is expected to reduce total live weight of hog slaughter under federal inspection in 1933-34 about 12 per cent below that of 1932-33.

Federally inspected slaughter of hogs during the marketing year which ended September 30, 1933, not including pigs and sows slaughtered for government account, totaled about 47,103,000 head as compared with 46,655,000 in 1931-32. Slaughter during the marketing year just ended was the largest since 1928-29. The average live weight of hogs slaughtered under federal inspection for the 1932-33 marketing year of about 232 pounds was 2 per cent greater than the average weight in the 1931-32 year, consequently the increase in the total live weight of hogs slaughtered was relatively greater than the increase in numbers of hogs slaughtered.

The prospects for continued small exports of American hog products to foreign markets are largely the result of (1) the import quotas on cured pork now in effect in Great Britain, and (2) the very high import

duties imposed by Germany on lard. Indications are that, under the quotas as drawn and as contemplated, American cured-pork exports (chiefly hams and shoulders) in 1933-34 may be smaller than the unusually small exports during the last two years. In the case of lard, a marked curtailment of the German market may be expected to result in relatively small exports of this product from the United States in 1933-34. Total exports of hog products from the United States during the 1932-33 marketing year ending September 30, amounting to about 703,000,000 pounds, were about 3.5 per cent larger than in the 1931-32 season; but they were about 5 per cent smaller than in 1930-31. The level of exports during the last three years, however, has been much below that of other post-war years.

After declining almost steadily since early 1930, hog prices reached the lowest level in more than fifty years in late December, 1932. From January to March of this year the trend in prices was slightly upward as a result of reduced slaughter supplies. Primarily because of the expectation of rising prices, a strong speculative demand for hog products developed in April and hog prices advanced sharply in May. The average price of hogs at Chicago in May was \$4.51 per 100 pounds, the highest monthly average for that market since November, 1931. This advance was partially maintained during June and July, despite the largest hog slaughter on record for the three-months period, May to July. With supplies continuing relatively large, hog prices declined during August. During September hog marketings were reduced and prices advanced somewhat, but this price rise was lost in October. The Chicago average price of hogs at the end of October was \$4.10, which was nearly \$1.00 higher than that of the same date in 1932. For the 1932-33 marketing year, the average price paid by packers was \$3.69 per 100 pounds, about \$0.35 less than in the previous year.

Recently a more permanent plan for hog-production control has been announced by the Agricultural Adjustment Administration. The plan for reducing slaughter supplies of hogs in 1934-35 provides for a reduction on the part of coöperating producers of 25 per cent in the number of hogs sold for slaughter from a base-period production. The extent to which such a reduction is realized will depend upon the proportion of hog raisers that come under the plan, the extent to which noneoöperators expand their production in anticipation of an advance in prices resulting from reduced total production, the dependability of the base-production figures upon which the 25 per cent reduction is computed, and the extent to which coöperators carry out their agreements to reduce their production.

POULTRY AND EGGS

It is too early to anticipate the production of eggs in the United States in 1934 with any assurance, but with the total number of potential layers, including pullets not yet of laying age, about 1 per cent greater than last year, no very material change in the spring production of 1934 from that of 1933 appears probable, since the rate of layings during the peak months of production varies little from year to year. Indications on the probable production in the fall and winter of 1934 are filled with uncertainties. The number of chickens that will be hatched in the spring of 1934 will depend mainly upon the prices received for poultry products, upon their relation to feed costs during the winter and spring, and upon the outlook at hatching time.

The production of baby chicks by commercial hatcheries during the hatching season of 1933 was about 8 per cent greater than the production during the corresponding period of 1932. The output of baby chicks by commercial hatcheries in the western states this year was approximately 12 per cent larger than in 1932. To some extent this increase reflects a slight expansion in laying flocks in the West, but it is chiefly to replace old hens that have been carried in flocks from previous years.

Although prices of poultry products have been low most of the time during the last two years, prices of feed have been relatively much lower, especially in the Middle West. California producers less favorably located with reference to feed supplies have had less of an advantage. Nevertheless until July, 1933, the egg-feed ratio in California was not unfavorable to poultry producers and the West Coast showed some increase in the number of layers in October, 1933. In July, 1933, a sharp rise in feed prices had reversed the favorable relation between prices of feed and poultry products, making it unfavorable to poultrymen.

The small commercial hatchings of 1932 are partially reflected in the decrease in the number of eggs shipped from California and the other western states. The five leading egg-shipping states of the West sent out 23 per cent fewer cars of eggs during the first 10 months of 1933 than during the similar period of 1932. The latter year was one of relatively small shipments. California shipments of eggs were 33 per cent less during the first 10 months of 1933 than during the similar period of 1932. A larger production of commercially hatched baby chicks in both the mountain and the Pacific Coast states this year indicates that flocks may be slightly expanded, and, if so, shipments in 1934 may exceed those of 1933.

The average farm price of eggs in the United States for the spring months of April, May, and June of 1933 was 10.7 cents a dozen as compared with 10.4 cents for the same months in 1932. Corresponding prices for California are 13.6 and 14.2 cents, respectively. The slightly higher prices in the spring of 1933 were largely to be explained on the basis of a rising level of prices and increased storage demand, since production was greater than during the same months of 1932. The rise in farm egg prices between spring and fall in 1933 was greater than would be expected of such increases during the last ten years. This rise in prices was largely due to a slowly rising price level and to sharply curtailed production after June. Prices in 1933, however, did not rise as rapidly as in 1932, when storage stocks were much smaller.

Stocks of shell eggs placed in cold storage during the spring and early summer of 1933 were less than 2 per cent larger on August 1 than the five-year average on that date. In 1932 stocks had been abnormally low so that a 48 per cent increase occurred in 1933. From August 1, 1933 to to November 1, 1933, the stocks of shell eggs in storage were reduced 4,325,000 cases as compared with the five-year average of 3,932,000 cases and the 1932 removal of 3,216,000 cases.

Frozen-egg stocks in storage on August 1, 1932, were equivalent to 3,075,000 cases of shell eggs, an increase of about 8 per cent from the August 1 holdings of 1932, and an increase of 7 per cent above the average August 1 stock for the five years 1928-1932. The reduction in frozen-egg stocks between August 1, 1933 and November 1, 1933, was equivalent to 725,000 cases as compared with 709,000 cases in 1932 and a five-year average of 527,000 cases, indicating a heavier use of frozen eggs during the three months. November 1 stocks of combined shell and frozen eggs were equivalent to 7,528,000 cases of shell eggs, as compared with 5,348,000 cases on November 1, 1932, and a five-year January 1 average of 7,735,000 cases.

Receipts of eggs at four markets were 12,307,000 cases for the first 9 months of 1933 as compared with 11,224,000 cases for 1932 and an average of 12,998,624 cases for the five years 1928-1932. During the first 7 months of 1933 receipts exceeded those of the previous year by almost 14 per cent. Receipts during August, September, and October were lower than for similar months in 1932, and indications are that the supply of fresh eggs will continue smaller than last year, possibly through December. The very heavy production of last winter is not generally anticipated during the coming winter.

The farm price of chickens in the United States in March, 1933, was 9.1 cents a pound, the lowest price on record since 1910. Prices recovered

slightly in midsummer but declined from July through October, and the average price for the first 10 months of 1933 was the lowest since records were first kept in 1910.

Total stocks of dressed poultry in storage began to increase as of July 1, 1933, instead of following a normal seasonal decline until about September 1. Throughout September and October supplies moved into storage at less than the normal rate so that total storage supplies on November 1, 1933, were 59,631,000 pounds as compared with 54,989,000 pounds on the same date in 1932, and a five-year average of 64,979,000 pounds.

As compared with past years neither the supplies of eggs nor chickens appear to be burdensome. Competition between chickens and other classes of poultry and meats will undoubtedly have considerable influence. The turkey crop of 1933 is almost as large as that of 1932 and prices in November, 1933, are lower than they were in the same month of 1932. Assuming that decreases in slaughter of hogs and sheep will be balanced by increased slaughter of cattle, competition from the supply of these meats will probably be about as great as it was last winter.

SHEEP

Sheep numbers in California are now on the downward trend, following a nine-year period, 1922-1930, in which numbers increased nearly 1,250,000 head, or more than 56 per cent. This year, 1933, is the third year of a decrease in numbers. In view of the present position of the sheep industry in California and the other western states as regards land ownership, range control, and grazing allotments, it is highly improbable that the downward trend in numbers in the West will be of long duration. Should wool prices continue at or near present levels through next year, and should feed and weather conditions for the next two years be favorable, it is not improbable that 1934 will be the last in the downward trend of numbers with an upward tendency evident in 1935.

In the United States sheep numbers increased nearly 17,000,000 head or more than 45 per cent during the nine-year period 1923-1931. Numbers have been declining for two years. In two of the three previous cycles, numbers declined over a period of three years, whereas in the other they continued downward for six years. In the "native," or "farm-flock," states, where sheep are largely a minor enterprise, no material change in flock numbers or lamb production during the next few years appears probable. In the western sheep states the length and extent of the downward movement in flock numbers will be determined largely by the number of ewe lambs kept for flock replacements during

the next few years. In California and in the other western sheep states, market conditions have tended to increase the selling of ewe lambs and to retard the marketing of the old ewes and the culling of the breeding flocks, making the present number of old ewes relatively large. Normal replacements this year are unlikely because of the present widespread poor range conditions, prospective feed shortages during the coming winter, and possible difficulties of financing. However, if relatively larger numbers of ewe lambs should be kept this year, the number of lambs to be marketed from the late lamb crop would be considerably reduced. This would cut down the number of feeder lambs marketed and would tend to adjust the number of those to the poor feed situation in the Corn Belt.

The lamb crop in the United States was 2.5 per cent smaller in 1933 than in 1932 and was the smallest since 1929. Practically all the decrease was in the western sheep states, where the lamb crop of this year was not only 4.0 per cent smaller than that of 1932 but the smallest since 1929. The reduction in the 1932 western lamb crop was largely the result of the severe winter of 1931-32 and the shortage of feed following the 1931 drouth. The reduction in the lamb crop this year was caused by the unfavorable spring weather with severe storms in April and May, and the shortage of feed during the lambing period in the late lambing states.

Present indications are that the competition which California spring lambs experience from old lambs will be less in 1934 than usual. Shipments of lambs from markets into the Corn Belt from July to September were but little different from the very small shipments in these months in 1932 and were over 40 per cent smaller than the average for the five years 1927-1931. The direct movement of western lambs to Corn Belt feed lots for these months was also below that of last year; and the total movement from markets and direct for the six months, July to December, promises to be below that of last year. Although information available about feeding in the western states before the middle of November is usually inadequate, reports from these states indicate that for the whole area feeding will be in somewhat smaller volume than last year, with most of the decrease in Colorado and Texas.

The premium prices offered for spring lambs have attracted the attention of eastern producers, and during the past four years Tennessee, Missouri, Kentucky, and Virginia have rapidly entered the field of early spring-lamb production to give strong competition for California spring lambs, especially those going to market in April and May. Contrary to the trend in the United States as a whole or California in particular, the number of sheep in these states has kept on increasing since 1931. Ari-

zona and Texas have also given increased competition in the early spring-lamb trade and the combined total number of sheep in these states has shown an increase over last year.

The trend of sheep and lamb prices was sharply downward from early 1929 to the end of 1931. From late 1931 to May, 1933, the prices received by California producers for lamb fluctuated between \$3.50 and \$6.50 per 100 pounds with a tendency to hold close to \$4.50 much of the time. During the latter part of May of this year, and in early June, lamb prices advanced sharply from \$4.00 to almost \$6.00 per 100 pounds f.o.b. country points. This advance in prices was fairly well maintained through June and July, but prices have tended to weaken somewhat since early August. The price of Good to Choice grade slaughter lambs at San Francisco during October was about \$6.40 per 100 pounds as compared with \$4.90 during the same month last year. The increase in lamb prices during the summer as compared with a year earlier was largely a result of the sharp advance in prices of pelts and other by-products, since wholesale prices of dressed lamb have been lower than last year.

World sheep numbers and world wool production have been relatively large during recent years, but world wool production in 1933 was smaller than in 1932. Domestic-mill activity has been at high levels for the last 6 months and conditions in the wool industry in Europe have also improved. Although wool prices have advanced materially in both domestic and foreign markets, the domestic advance has been the greater; and the margin between domestic and foreign prices has widened sufficiently to permit imports of substantial quantities of most grades of wool.

Sheep numbers in most of the important sheep-producing countries now appear to be on a downward trend. This reduction in numbers will tend to result in a further decline in wool production in 1934, but this tendency may be altered to some extent by changes in weather and feed conditions. World sheep numbers expanded greatly during the five years prior to 1932, but in most of the important sheep-producing countries numbers now appear to be declining. In many countries, however, weather and feed conditions are the most important factors affecting the level of sheep production. After having reached a record total during 1931 and 1932, sheep numbers showed a decrease in most countries reporting thus far in 1933. In the United States the estimated decrease was 3 per cent and in South Africa it was 5 per cent. A further reduction in numbers during the next year in several Southern Hemisphere countries is probable because of the severe drouth prevailing in those countries this year.

Consumption of wool by United States mills increased rapidly from April to June, and since June has been maintained at a relatively high level. In the first 9 months of 1933 consumption of combing and clothing wool by manufacturers reporting to the Bureau of the Census, comprising a major portion of the industry, was about 40 per cent greater than in the corresponding months in 1932. Consumption in the summer months of this year was greater than in any 3-month period since 1923. In view of the low level of consumer incomes, a continuation of this very high rate of activity over any considerable length of time was hardly to be expected, and some decline was evident in August and September.

Conditions in the wool industry have also improved in foreign countries in 1933, particularly in the United Kingdom. Unemployment in the woolen and worsted industry of the United Kingdom in recent months has been lower than at any time since the first half of 1929. Most of the European countries and Japan increased their imports of wool in the period so far reported for 1933 as compared with the corresponding period of 1932. Prices of wool advanced rapidly in the United States following the bank holidays in March and the suspension of the gold payments in April. This upward movement has slowed down considerably in recent months; but the rapid clearance of the clip in the western states, the strength in foreign markets, and the high rate of manufacturing activity, have helped to maintain prices during periods of slow trading at Boston. To the middle of October the advance in wool prices has been well maintained despite the fact that declines in prices of other important commodities have occurred during the last two months. Prices of strictly combing territory wool, scoured basis, at Boston in October were 90 to 110 per cent above the average price for February and were 125 to 165 per cent higher than in July, 1932, the lowest points reached in many years.

ASPARAGUS

The peak in the upward trend of asparagus production will probably be reached in 1934. For two or three years thereafter, production although tending downward is likely to continue heavy. The 1934 crop is now estimated to be 10 per cent larger than the average of the five years 1929-1933.

According to a survey made by the Cannery League of California there will be around 66,920 acres of asparagus in northern California to cut in 1934, which is about 5 per cent less than the acreage cut in 1933. Around 5,800 acres of asparagus were plowed out after the 1933 harvest-

ing season, while only 2,190 acres will come into bearing for the first time in 1934. Because of the larger proportion of the acreage that will be in full bearing in 1934, estimated production is slightly above that of 1933.

Plantings of asparagus during the past two years have been small, amounting to only 2,190 acres in 1932 and 2,600 acres in 1933, as against an average of 9,400 acres in 1930 and 1931. For 1934, growers have indicated that they intend to plant 4,300 acres. Plantings in 1933 will come into bearing in 1935, while 1934 plantings will come into bearing in 1936. By 1936 about 16,000 acres now in asparagus will be more than twelve years old, and it is probable that a substantial part of it will have been removed. Thus, it appears that the bearing acreage in 1936 will be about 10 per cent smaller than in 1934 but about 10 per cent larger than the 1929-1931 average.

Carlot shipments of fresh asparagus from California were smaller in 1933 than in either 1932 or 1931. This last season 2,120 cars of fresh asparagus were shipped from the state as against 3,431 in 1932, and 2,664 cars in 1931. Competition from asparagus produced in other states was considerably greater in 1933, however, than in either 1931 or 1932. The 1933 shipping season in California was about two weeks later than in the two previous years, while in South Carolina and Georgia it was about two weeks earlier. As a result the peak shipments from these three states reached the market at the same time. In 1933 only 6 per cent of the total California shipments had moved to market before shipments from other states began as compared with 37 per cent in 1932, 63 per cent in 1931, and an average of 27 per cent for the five years 1926-1930.

Total United States supplies of fresh asparagus during the first ten weeks of the California shipping season amounted to 2,844 cars in 1933 as against 3,784 cars in 1932 and 2,800 cars in 1931. Of these amounts California contributed 71 per cent in 1933, 84 per cent in 1932, and 84 per cent in 1931.

Prices received for California fresh asparagus were as low in 1933 as in 1932, despite the fact that total United States shipments were 28 per cent smaller in 1933 than in 1932. The average price of California asparagus at New York in 1933 was \$2.71 a crate, or \$0.02 a crate lower than in 1932. In 1931, prices averaged \$3.54 a crate as against an average of \$4.45 a crate for the five years 1926-1930.

During each of the past three seasons the demand for fresh asparagus has been lower than in the preceding season. Measured in terms of prices, the demand for fresh asparagus in New York City was the equivalent of \$0.45 a crate lower in 1933 than in 1932, \$0.40 a crate lower in 1932 than in 1931, and \$0.90 a crate lower in 1931 than in 1930. Thus, between

1930 and 1933 the shrinkage in demand for fresh asparagus was equivalent to \$1.75 a crate. This entire reduction in demand measured in terms of price was caused by a combination of two factors: the decrease in the buying power of consumers and the decline in the general price level of all commodities. In March, 1930, the index of factory employment in the United States stood at 92.9 per cent of the 1923-1925 average, in March, 1933, at 56.6 per cent. The all-commodity index of wholesale prices was at 132 per cent of the 1910-1914 average in March, 1930, and at 88 per cent in March, 1933. During recent months there has been a substantial rise in both indexes. In September, 1933, the latest month available, the index of factory employment was at 74.3 and the all-commodity index of wholesale prices at 103.

The 1933 pack of canned asparagus amounted to 2,135,000 cases which, together with the carryover on March 1, 1933, of 454,000 cases, made a total supply of 2,589,000 cases available for shipment in the 1933-34 season. The largest volume ever shipped in any one season was 2,619,000 cases and that was in 1929-30 when demand conditions were very favorable. In 1930-31, shipments fell to 2,028,000 cases and in 1931-32 to 1,646,000 cases. In 1930-31 and 1931-32, selling prices of canned asparagus were maintained almost as high as those prevailing in 1929-30, but in 1932-33 they were about 23 per cent lower. This marked reduction in prices resulted in a substantial increase in consumption despite the fact that demand conditions were even more unfavorable in 1932-33 than in 1931-32. Total shipments of canned asparagus during the 1932-33 season amounted to 1,918,000 cases, 17 per cent larger than in the previous season. Cannery selling prices this season have been about 16 per cent lower than in 1932-33. This lower price, together with the improved demand conditions which have developed since March, has stimulated consumption. Consequently, total shipments for the 1933-34 season are likely to be larger than for the 1932-33 season.

COTTON

Present prospects are that the world supply of all cotton in 1933-34 will be even larger than in either of the two previous seasons when the total supplies were equivalent to about 41,000,000 bales of approximately 478 pounds. Although the supply of American cotton in 1933-34 is about 1,500,000 bales less than that of 1932-33, indications are that this decrease will be more than offset by the increase in the 1933-34 crop in foreign countries and the somewhat larger world carryover of foreign cotton.

The world supply of American cotton for the season 1933-34 amounts to about 24,500,000 bales. This supply is about 1,500,000 bales less than the extremely large supplies of about 26,000,000 bales for each of the two previous seasons, but is still about 6,000,000 bales larger than the ten-year average supply of 18,500,000 bales for the period 1921-22 to 1930-31. Without the cotton adjustment program of the Agricultural Adjustment Administration, the 1933-34 supply would probably have been around 28,700,000 bales, or about 2,700,000 bales larger than the record supplies of the two previous seasons.

The world supply of American cotton for the season 1933-34 is made up of a carryover on August 1 estimated at 11,600,000 bales and the 1933 crop, which on December 1 was estimated at 13,177,000 bales. This carryover of 11,600,000 bales is nearly 1,400,000 bales less than the peak carryover of about 13,000,000 bales in 1932, but is still much larger than that for any previous year. It is still more than twice as large as the average for the ten-year period, 1922 to 1931, and continues to exert a depressing influence on cotton prices.

The 1933 domestic crop, estimated at almost 13,177,000 bales, is only about 175,000 bales larger than the 1932 crop, but is 3,918,000 bales less than the 17,095,000-bale crop in 1931 which was the second largest crop on record. Except for the reduction in production estimated at about 4,300,000 bales brought about by the adjustment program, the 1933 crop would probably have been the second largest crop thus far produced, exceeding that of 1931.

The indicated acreage for harvest in 1933 is about 30,000,000 acres, 10,400,000 acres having been removed from production under the adjustment program and about 400,000 additional acres having been abandoned. The 1933 acreage for harvest is approximately 5,900,000 acres, or 16 per cent less than that of 1932 and about 25 per cent less than that of the five-year period, 1928-1932. Weather conditions during the growing season were very favorable and boll-weevil damage was relatively light, resulting in unusually large yields. The October estimated yield of 205.3 pounds per acre for the 1933 crop is about 18 per cent above that for 1932, 23 per cent above the ten-year average, and the largest since 1914 with the exception of 1931.

The area planted to cotton in the United States in 1933 was estimated at 40,800,000 acres, or an increase of 11.6 per cent over that of the previous year. Although this year's planted acreage was 4,300,000 larger than in 1932, it was slightly below the average of the last five years. Prior to 1933 the area planted to cotton in the United States had been reduced for three successive years, and in 1932 was 18 per cent below the 1929

acreage. The increase in the acreage planted in 1933 may be largely accounted for by the unsatisfactory returns from other crops, the large supply of available labor, and the fact that rather large supplies of food and feed products were on hand, along with the increase in cotton prices which occurred around planting time.

The recent cotton program announced by the Agricultural Adjustment Administration calls for a restriction in the 1934 cotton crop to 25,000,000 acres, which—if yields should be equal to the average of the last ten years—would give a crop of around 9,500,000 bales. This would give a supply for the 1934–35 season of less than 20,000,000 bales as compared with the 1933–34 indicated supply of 24,500,000 bales, the 26,000,000-bale supply for the 1931–32 and the 1932–33 seasons, and the ten-year average of approximately 18,500,000 bales. With cotton acreage in 1934 restricted to 25,000,000 acres, the 1934 crop would probably be materially less than that of 1933, even if the more productive soils are utilized, the crop is more intensively cultivated, and larger quantities of fertilizers are applied, all of which would cause yields per acre to be considerably above that of the 1922–1931 average. But for the production from 25,000,000 acres to equal the October estimate of the 1933 crop, average yields would have to be 79 pounds above the 167-pound average of the last ten years, 31 pounds per acre above the high yields indicated for 1933, and 23 pounds above the extremely high yields of 1898–99. Without acreage-control measures, the improved returns from cotton, an abundant labor supply, and somewhat improved credit conditions might easily stimulate the planting of an acreage in 1934 in excess of the 40,800,000 acres planted in 1933.

Preliminary estimates of total foreign production in 1933–34 indicate an increase equivalent to about 1,500,000 bales of 478 pounds, or about 12 per cent over the 1932–33 production. The prospective crop is larger also than the average of the previous five years by 1,000,000 bales or 8 per cent. The world carryover of foreign cotton on August 1, 1933, as indicated by stocks reported at specified locations, was about 450,000 bales larger than a year earlier, although it was smaller than for any other year since 1927. The indicated supply of foreign-grown cotton in 1933–34, therefore is about 1,950,000 bales larger than in 1932–33 and 1,000,000 bales larger than in the preceding five-year average.

POTATOES

The available information points towards a substantial increase in the acreage and production of early potatoes in the United States in 1934, unusually low stocks of old potatoes on hand in the spring of 1934, and about the same acreage planted to late potatoes in 1934 as was planted in 1933.

Potato growers in the early and intermediate states reported about October 1 that they intended to increase their 1934 commercial acreage about 19 per cent over that harvested in 1933 and 7 per cent over that of 1932. The "intention reports" indicate a combined acreage increase of 36 per cent in Florida and southern Texas, 18 per cent in the group comprising the other early sections of Texas and the states of Alabama, California, Georgia, Louisiana, Mississippi, and South Carolina, a 17 per cent increase in the second early states of Arkansas, North Carolina, Oklahoma, and Tennessee, and a 16 per cent increase in the intermediate states of Virginia, Kansas, Missouri, Maryland, Kentucky, New Jersey, and Nebraska. If it is assumed that the acreage now planned is actually planted in 1934 and that average yields are obtained, the production of commercial early, second early, and intermediate potatoes will total about 40,000,000 bushels as compared with 30,100,000 bushels in 1933 and 32,400,000 in 1932.

The increased production of early potatoes is likely to be offset, to a considerable extent, by the small carryover of old potatoes. The small production of late potatoes in 1933, together with the heavy fall marketings, indicates that the supply of old potatoes available for spring markets will be short. The United States potato crop in 1933 is now estimated to be the fifth smallest during the last twenty-five years. The November 1 forecast was 318,000,000 bushels, or 40,000,000 less than the 1932 crop, and compares with the small crops produced in 1925 and 1919 of about 298,000,000 bushels. The 1933 crop in the 30 late states was estimated at 260,000,000 bushels, which is much smaller than the 1926-1930 average of 284,634,000 bushels and not much greater than the crop of 247,000,000 bushels in 1925 and 241,000,000 in 1919. Shipments of potatoes from the late states started unusually early this season as a result of high market prices. The rail and boat movement to October 28, 1933, from the 30 late states totaled 45,400 cars as compared with 30,800 cars moved to October 29, 1932.

There are as yet no reports concerning the acreage for 1934 planned by the growers in the late-producing sections of the United States, but some idea of their probable change in acreage can be obtained from their

previous reactions to market prices. After the high prices received for the 1919 crop, growers in the United States as a whole increased their planting of potatoes only 1,000 acres. The decrease in the 30 late states was 16,000 acres, which was offset by a slightly larger increase in the early and intermediate states. After the high prices in 1925-26, growers in the country as a whole decreased plantings 6,000 acres, and the decrease in the 30 late states was again 16,000 acres. In 1930, after the good prices obtained for the 1929 crop, the acreage planted in the 30 late states did not exceed that planted in 1929, but the early states increased by 52,000 acres and the intermediate states by 6,000 acres, which was equivalent to a 2 per cent potato-acreage increase for the United States as a whole. The acreage in the late states was held in check both in 1920 and in 1926 by the scarcity and high prices of seed potatoes.

WHEAT

The world wheat market continues to be depressed by accumulated stocks of wheat, a high level of production, and severe restrictions on the importation and use of wheat by European countries. During October, the price of wheat at Liverpool, when measured in terms of gold, fell to the lowest level that has been reached in modern history. Prices in the United States thus far this season have been higher than last year, not because of improvement in the world wheat situation but because of factors peculiar to the United States.

United States prices have been high this year as compared with those of world markets. From mid-March through July this appears to have been due in part to speculation on further depreciation of the dollar, but at present the relatively high price in the United States is due primarily to the very short crop harvested this year. Prospective reductions in wheat acreage and the steps taken to finance exports from the Pacific Coast have also aided in maintaining United States prices at relatively high levels. Thus governmental action along various lines during the last 6 months has been a prime factor in raising wheat prices in the United States above their levels of last year.

The acreage of wheat sown in the world, excluding Russia and China, has thus far shown no significant decline from the peak level that was reached in 1932-33 in spite of four years of low prices. The small reduction that has occurred has been confined to the exporting countries and has been greatest in the United States where the area sown has declined from 71,000,000 acres in 1928 to 63,900,000 in 1933. The combined acreage for Canada, Argentina, and Australia, on the other hand, was at a

high point in 1930-31 with an area of 64,300,000 acres; while in 1933, it had declined only to 59,400,000. In the four exporting countries of the lower Danube Basin there has been a decline from the peak of the harvested acreage of 20,900,000 reached in 1931 to 19,800,000 acres in 1933. In the importing countries of Europe there has been a marked upward trend in acreage since 1929, when the wheat-price-supporting measures of the various importing countries began to be more drastic. In 1929, the wheat area of these importing countries of Europe amounted to 51,700,000 acres; while in 1933, it reached a new high level of 57,400,000 acres. For the world, excluding Russia and China, total acreage which reached a peak of 263,900,000 acres in 1932-33 is now estimated at 263,300,000 for the current season.

The carryover of wheat into the current season apparently sets a new record for the world (excluding Russia and China). The increase in world stocks was principally accounted for by record holdings in North America, by large supplies still available in the Southern Hemisphere, and by a considerable increase in stocks in the deficit areas of Europe where the abundant harvests of 1932 led to the concentration of heavy supplies of native wheat, particularly in Germany, France, and Spain. These increases were more than sufficient to offset moderate decreases in holdings in other exporting areas and in some of the minor importing areas. The carryover in the principal exporting countries, together with quantities afloat and port stocks in the United Kingdom as of July 1, 1933, was the highest on record, amounting to 782,000,000 bushels as compared with the previous high of 698,000,000 reached a year earlier and what may be considered a normal level of such stocks of about 300,000,000 bushels.

Prospects are that the United States will again have a surplus of wheat for export in the 1934-35 crop year. As a result of this season's short crop and governmental aid in disposing of excessive surpluses from the Pacific Coast region, our carryover will presumably have been reduced from a level of 386,000,000 bushels as of July 1, 1933, to about 240,000,000 bushels as of July 1, 1934. Such a quantity would be more than 100,000,000 bushels in excess of the average carryover prior to 1929. Furthermore, if abandonment and yields should be average, the new crop may be expected to exceed domestic utilization even if there is an acreage reduction of 15 per cent.

Under normal conditions the spread between United States prices and world prices is closely related to the quantity of wheat the United States exports. Over short periods the quantity exported is determined primarily by the price spread, while over long periods the quantity that needs

to be exported largely determines how high United States prices are as compared with world prices—the larger the surplus the lower the United States price. In almost every year, prices in some regions of the United States are on an export basis for at least a part of the year, and this usually means that Chicago prices must be about 10 to 20 cents per bushel (assuming present-day freight rates) below Liverpool during such periods. In exceptional years such as 1925–26, 1930–31, and the current year, United States prices have been far above an export basis throughout a large part of the year.

In 1925–26 this situation was due to our extremely short crop of winter wheat harvested that year, while during the latter half of 1930–31 it was due primarily to the operations of the Grain Stabilization Corporation. In the current season relatively high United States prices are due partly to the very short crop of wheat, a crop which is less than the probable consumption by about 100,000,000 bushels; but this influence has been reinforced by prospective acreage reduction and by the governmental aid given to exporting in the Pacific Northwest. During July, the expectation of further depreciation of the dollar was also an important contributing factor.

There is the possibility of a reduction in world wheat acreage and relaxation of import restrictions as a result of the London Wheat Conference. Unless unfavorable developments occur, this agreement should tend to aid in decreasing acreage in both the importing and the exporting countries and thereby lead to a more satisfactory balance between production and consumption. It also provides a more tangible basis for reducing wheat trade restrictions of the importing countries, once there has been a material and sustained advance in world wheat prices.